LPDES PERMIT NO. LA0007854, AI No. 1556

LPDES FACT SHEET and RATIONALE
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

I. Company/Facility Name: ANGUS Chemical Company
P.O. Box 1325
Sterlington, LA 71280

II. Issuing Office: Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313

III. Prepared By: Jenniffer Sheppard
Industrial Water Permits Section
Water Permits Division
Phone #: 225-219-3138
E-mail: jenniffer.sheppard@la.gov

Date Prepared: August 23, 2007. Revised on October 11, 2007.

IV. Permit Action/Status:

A. Reason For Permit Action:

Proposed reissuance of an Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46.

* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401, 405-415, and 417-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC 33:IX Chapter 11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

B. NPDES permit - NPDES permit effective date: N/A
NPDES permit expiration date: N/A

EPA has not retained enforcement authority

C. LPDES permit - LPDES permit effective date: April 1, 2002
LPDES permit expiration date: March 31, 2007

LPDES Major Modification effective date: December 1, 2005

D. Application received on September 27, 2006. Application Addendum received on May 8, 2007. Additional information received via e-mail on June 21, 2007 and September 12, 2007.

V. Facility Information:

A. Location - 350 Louisiana Highway #2 in Sterlington

B. Applicant Activity -

According to the application, ANGUS Chemical Company, is a specialty synthetic organic chemical plant that manufactures nitroparaffins and their derivatives.

ANGUS has proposed three projects that could occur during this permit cycle and requests consideration for incremental flow/limitation increases be handled in phases. Therefore, this permit has been developed with the following operational phases:

Phase 1 - Nitration Pilot Plant: This phase will entail completing updates to the ANGUS WWTP and installation and operation of the proposed nitration pilot plant in the first half of 2008, resulting in increased flow at Outfall 002 of approximately 10,000 GPD.

Phase 2 - Deep Well Elimination Project: This phase will consist of installation and operation of the proposed Wet Air Oxidation (WAO) treatment unit by the end of 2008 resulting in an increased flow at Outfall 002 of approximately 130,000 GPD.

Phase 3 - Chem Wash Elimination Project: During this phase, ANGUS will install and operate the proposed spent bicarbonate wash water process (by the end of 2009) resulting in an increased flow at Outfall 002 of approximately 23,000 GPD.

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401, 405-415, and 417-471 have been adopted by reference at LAC 33:IX.4903)

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414 (Subparts H and I)
Process Flow -	
Phase 1 0.8394 MGD	
Phase 2 0.9694 MGD	
Phase 3 0.9924 MGD	

Other sources of technology based limits:
LDEQ Stormwater Guidance, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).
Louisiana Water Quality Management Plan for Sanitary Dischargers.
LDEQ Sanitary General Permits
Best Professional Judgement

D. Fee Rate -
1. Fee Rating Facility Type: major
2. Complexity Type: VI
3. Wastewater Type: II
4. SIC code: 2869 and 2873

E. Continuous Facility Effluent Flow -

Phase 1: 0.920 MGD (Estimated Flow)
Phase 2: 1.050 MGD (Estimated Flow)
Phase 3: 1.073 MGD (Estimated Flow)

The Max 30 Day Flow for Phase 1, as reported in the September 2006 application submittal, is 0.910 MGD. However, an estimated flow of 0.92 MGD has been used for technology and water quality screening purposes due to the incorporation of the additional 10,000 GPD discharge expected in the first half of 2008.

VI. Receiving Waters: Ouachita River

1. TSS (15%), mg/L: 6
2. Average Hardness, mg/L $CaCO_3$: 38.5
3. Critical Flow, cfs: 764
4. Mixing Zone Fraction: 0.33
5. Harmonic Mean Flow, cfs: 3757
6. River Basin: Ouachita River, Segment No. 080101
7. Designated Uses:
   The designated uses are primary contact recreation, secondary contact recreation, fish and wildlife propagation, and drinking water supply.

Information based on the following: Water Quality Management Plan, Volume 5A, 1994; LAC 33:IX Chapter 11;/Recommendation(s) from the Engineering Section. Hardness and 15% TSS data come from monitoring station 13 on the Ouachita River at the bridge on State Highway 2 in Sterlington, Louisiana listed in Hardness and TSS Data for All LDEQ Ambient Stations for the Period of Record as of March 1998, LeBlanc. This information was presented in a memorandum dated May 9, 2007 from Will Barlett to Jenniffer Sheppard (See Appendix C).

VII. Outfall Information:

Outfall 002 - Phase 1

A. Type of wastewater - the discharge of Sterlington Plant and Nitration Pilot Plant process wastewater, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

B. Location -from the biotreatment plant discharge line after the exit of the final filter and before discharge into the Ouachita River at Latitude 32°40'27", Longitude 92°06'59".

C. Treatment - treatment of process wastewaters consists of:
- equalization
- activated sludge biological treatment system
- denitrification (anoxic treatment)
- extended aeration
- clarification
- filtration

D. Flow - Continuous Flow 0.920 MGD.

Process Wastewater*	0.8394 MGD
Utility Wastewater*	0.0520 MGD
Sanitary Wastewater*	0.0286 MGD

* Specific component waste streams are defined at Appendix A-1.

E. Receiving waters - Ouachita River

F. Basin and segment - Ouachita River Basin, Segment 080101

Outfall 002 - Phase 2

A. Type of wastewater - the discharge of Sterlington Plant, Nitration Pilot Plant, and Wet Air Oxidation process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

B. Location -from the biotreatment plant discharge line after the exit of the final filter and before discharge into the Ouachita River at Latitude 32°40'27", Longitude 92°06'59".

C. Treatment - treatment of process wastewaters consists of:
- equalization
- activated sludge biological treatment system
- denitrification (anoxic treatment)
- extended aeration
- clarification
- filtration

D. Flow - Continuous Flow 1.050 MGD.

Process Wastewater*	0.9694 MGD
Utility Wastewater*	0.0520 MGD
Sanitary Wastewater*	0.0286 MGD

* Specific component waste streams are defined at Appendix A-2.

E. Receiving waters - Ouachita River

F. Basin and segment - Ouachita River Basin, Segment 080101

Outfall 002 - Phase 3

A. Type of wastewater - the discharge of Sterlington Plant, Nitration Pilot Plant, Wet Air Oxidation, and Bicarbonate Wash Water process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

B. Location -from the biotreatment plant discharge line after the exit of the final filter and before discharge into the Ouachita River at Latitude 32°40'27", Longitude 92°06'59".

C. Treatment - treatment of process wastewaters consists of:
- equalization
- activated sludge biological treatment system
- denitrification (anoxic treatment)
- extended aeration
- clarification
- filtration

D. Flow - Continuous Flow 1.073 MGD.

Process Wastewater*	0.9924 MGD
Utility Wastewater*	0.0520 MGD
Sanitary Wastewater*	0.0286 MGD

* Specific component waste streams are defined at Appendix A-3.

E. Receiving waters - Ouachita River

F. Basin and segment - Ouachita River Basin, Segment 080101

Internal Outfall 102 (for use with Phases 1, 2, and 3)

A. Type of wastewater - the discharge of sanitary wastewater.

B. Location - from the plant discharge point after commingling with process wastewater and before discharge in the plant process wastewater treatment unit and discharge through Final Outfall 002, at Latitude 32°40'27", Longitude 92°06'59".

C. Treatment - None

D. Flow - Continuous, (Estimated Flow) 0.0286 MGD

E. Receiving waters - Ouachita River via Final Outfall 002.

F. Basin and segment - Ouachita River Basin, Segment 080101

Outfall 004

A. Type of wastewater - the discharge of non-process stormwater; utility wastewaters including clean water from hydrotesting, steam condensate, safety shower water, eye bath water, and miscellaneous washdown waters; and uncontaminated deionized water, potable water, river water used as firewater, and clarified water.

B. Location - at the point of discharge prior to combining with the waters of the Sterlington Ditch, at Latitude 32°41'28", Longitude 92°06'59".

C. Treatment - None

D. Flow - Intermittent

E. Receiving waters - Ouachita River via Sterlington Ditch

F. Basin and segment - Ouachita River Basin, Segment 080101

Outfall 005

A. Type of wastewater - the discharge of clarifier underflow (ultra filtration reject water) and previously sampled utility wastewaters from Internal Outfall 105.

B. Location - at the point of discharge after commingling of streams listed in Internal Outfall 105 and the clarifier underflow (ultra filtration reject water) and prior to discharge into the Ouachita River, at Latitude 32°41'37", Longitude 92°05'13".

C. Treatment - Neutralization (as needed)

D. Flow - Continuous, estimated flow is 0.94464 MGD

E. Receiving waters - Ouachita River

F. Basin and segment - Ouachita River Basin, Segment 080101

Internal Outfall 105

A. Type of wastewater - utility wastewaters including boiler blowdown and boiler samples; BJ-29 Sump wastewater (wastewater from oil storage, centax area, and water treatment areas); reverse osmosis reject/cleaning and/or demineralizer backwash/regeneration; and once through cooling water, including from the electric and diesel air compressors, boiler feedwater pumps, the Bingham BFW pump, and boiler ID/OD fans with final discharge through Outfall 005.

B. Location - at the point of discharge from the collection header after the new Water Treatment Plant, before the commingling of this stream with the clarifier underflow or ultra filtration reject water at Final Outfall 005, at Latitude 32°41'37", Longitude 92°05'13".

C. Treatment - Neutralization (as needed)

D. Flow - estimated flow is 0.74307 MGD

E. Receiving waters - Ouachita River via Final Outfall 005

F. Basin and segment - Ouachita River Basin, Segment 080101

VIII. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current LPDES Permit:

A. Outfall 002 - ANGUS has requested that limitation development be based on three phases of operation. Therefore, limitations have increased from Phase 1 through 3 in accordance with the OCPSF Guidelines at 40 CFR 414, with the exception of water quality limited parameters.

B. Outfall 002 (all phases) - BOD_5 limitations of 310 lbs/day Monthly Average and 820 lbs/day Daily Maximum were retained from the current LPDES permit based on the Ouachita River Basin TMDL for BOD and Nutrients, issued July 1, 2002. A portion of the Margin of Safety (22 lbs.) has been utilized because the TMDL states that no reduction is needed for this facility. However, upon review, it appears that the TMDL was based off of a value applied in a proposed draft permit instead of the appropriate final permit. The Monthly Average in the final permit was 22 lbs. higher than what was used in the model. Therefore, use of the Margin of Safety was necessary to allow ANGUS to remain at existing loadings.

C. Outfall 002 (all phases) - Mercury limitations of 0.04 lbs/day Monthly Average and 0.09 lbs/day Daily Maximum have been retained based on the Ouachita River Mercury in Fish Tissue TMDL, issued June 13, 2002. The TMDL states that no reductions are necessary, but prior Mercury limitations should be retained. Therefore, Mercury limitations are retained in accordance with TMDL requirements.

D. Outfall 002 (all phases) - Total Cadmium limitations were removed from this permit. Limitations were previously established based on a 303(d) list impairment in the receiving waterbody. LDEQ completed new evaluations using clean methods sampling and analysis procedures in 2000/01. All values were less than the state criterion. Based on current data, the waterbody is meeting water quality standards. Therefore, Total Cadmium was delisted from the 303(d) list on June 13, 2002.

In addition to this parameter being delisted from the 303(d) list, DMR data from the current permit has been reviewed (a total of twenty one (21) samples were taken during the five year span of their LPDES permit). All 21 samples were reported on the DMRs as non-detect (lab result was less than the minimum quanitification level of 1 μg/L) for Total Cadmium. Therefore, based on the June 13, 2002 delist and the 21 non-detect DMR results for this parameter, it has been determined that there is no reasonable potential for ANGUS to discharge this pollutant. No limitations and/or reporting requirements have been placed in the proposed permit for Total Cadmium.

E. Outfall 002 (all phases) - ANGUS has requested monitoring frequency reductions for BOD_5 and TSS from 2/week to 1/month in accordance with the USEPA Memorandum "Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies." This request has been partially granted. Although ANGUS does qualify for the requested reductions, the Department has determined that 1/month sampling is not an adequate frequency for conventional and non-conventional parameters for major facilities. Therefore, the frequency for BOD_5 and TSS has been reduced from 2/week to 1/week.

F. Outfall 002 (all phases) - ANGUS has requested monitoring frequency reductions for Total Nickel from 1/week to 2/month. In accordance with the USEPA Memorandum "Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies," the monitoring frequency reduction request has been granted.

G. Outfall 002 (all phases) - ANGUS has requested a frequency reduction from quarterly to semi-annually for whole effluent toxicity testing (biomonitoring) at this outfall. This request has been denied. The recommendation to retain once per quarter sampling is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies (Revised June 30, 2000), and the Best Professional Judgement (BPJ) of the reviewer.

H. Outfall 002 (all phases) - Total Cyanide and Total Nickel Monthly Average and Daily Maximum limitations have increased for the following reasons:

1.) Increase in process flow.

2.) Utilization of higher guideline based concentrations. The April 1, 2002 LPDES permit used incorrect (non-guideline) concentrations in the calculation of the mass limits for these parameters. The 1994 NPDES permit (previous to the April 2002 LPDES permit) did utilize the correct guideline concentrations for initial limitation development. Therefore, in accordance with LAC 33:IX2707.L.2.a.ii.b, the mistaken calculation has been corrected using the appropriate guideline concentrations (OCPSF Guideline for metal bearing parameters, as listed in 40 CFR 414, Subpart I).

I. Internal Outfall 102 - pH monitoring has been removed from this outfall. Final Outfall 002 contains continuous pH monitoring requirements, therefore, monitoring is not required on the internal outfall.

J. Internal Outfall 102 - ANGUS has requested a monitoring frequency reduction for Fecal Coliform from 1/month to 1/6 months in accordance with the USEPA Memorandum "Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies." Thirty (30) fecal coliform samples were taken/reported on DMRs from January 2005 to August 2007. All values were zero (0). Therefore, the request to reduce monitoring from 1/month to 1/6 months for fecal coliform has been granted.

K. Outfall 004 - ANGUS has requested a monitoring frequency reduction for Ammonia Nitrogen and Oil & Grease from 1/week to 1/ month in accordance with the USEPA Memorandum "Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies." This request has been granted.

L. Outfall 004 - The sample frequency for flow has been changed from continuous to 1/week on this outfall due to the discharges being intermittent in nature.

IX. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

1. Outfalls 002 and 102 - Process Wastewaters & Internal Sanitary Wastewater

***Outfall 002 (Phase 1)** - the discharge of Sterlington Plant and Nitration Pilot Plant process wastewater, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

ANGUS Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Organic chemical manufacturing	40 CFR 414, Subpart(s) H and I

Calculations and basis of permit limitations are found at Appendix A-1, B-1, and associated appendices. See below for site-specific considerations.

PARAMETER	**MONTHLY AVERAGE (lbs/day)**	**DAILY MAXIMUM (lbs/day)**
Flow (MGD)	Report	Report
pH	6.0 (subject to pH excursion requirements)	9.0 (subject to pH excursion requirements)
BOD_5	310(*1)	820(*1)
TSS	431	1371
Total Chromium	0.95(*1)	2.27(*1)
Total Copper	1.21(*1)	2.87(*1)
Total Lead	2.17	4.68
Total Mercury	0.04(*2)	0.09(*2)
Total Nickel	10.33	24.33
Total Zinc	7.13	17.72
Total Cyanide	2.57	6.62(*1)
Acrylonitrile	0.67	1.69
Benzene	0.26	0.95

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Carbon Tetrachloride	0.13	0.27
Chlorobenzene	0.11	0.20
Chloroethane	0.73	1.88
Chloroform	0.15	0.32
1,1-Dichloroethane	0.15	0.41
1,2-Dichloroethane	0.48	1.48
1,1-Dichloroethylene	0.11	0.18
1,2-trans-Dichloroethylene	0.15	0.38
1,2-Dichloropropane	1.07	1.61
1,3-Dichloropropylyene	0.20	0.31
Ethylbenzene	0.22	0.76
Methyl Chloride	0.60	1.33
Methylene Chloride	0.28	0.62
Tetrachloroethylene	0.15	0.39
Toluene	0.18	0.56
1,1,1-Trichloroethane	0.15	0.38
1,1,2-Trichloroethane	0.15	0.38
Trichloroethylene	0.15	0.38
Vinyl Chloride	0.73	1.88
2-Chlorophenol	0.22	0.69
2,4-Dichlorophenol	0.27	0.78
2,4-Dimethylphenol	0.13	0.25
4,6-Dinitro-o-Cresol	0.55	1.94
2,4-Dinitrophenol	0.50	0.86
2-Nitrophenol	0.29	0.48
4-Nitrophenol	0.50	0.87

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Phenol	0.11	0.18
Acenaphthene	0.15	0.41
Acenaphthylene	0.15	0.41
Anthracene	0.15	0.41
Benzo (a) anthracene	0.15	0.41
Benzo (a) pyrene	0.16	0.43
3,4-Benzofluoranthene	0.16	0.43
Benzo(k)fluoranthene	0.15	0.41
Bis(2-ethylhexyl)phthalate	0.72	1.95
Chrysene	0.15	0.41
1,2-Dichlorobenzene	0.54	1.14
1,3-Dichlorobenzene	0.22	0.31
1,4-Dichlorobenzene	0.11	0.20
Diethyl phthalate	0.57	1.42
Dimethyl phthalate	0.13	0.33
Di-n-butyl phthalate	0.19	0.40
2,4-Dinitrotoluene	0.79	2.00
2,6-Dinitrotoluene	1.79	4.49
Fluoranthene	0.18	0.48
Fluorene	0.15	0.41
Hexachlorobenzene	0.005(*1)	0.012(*1)
Hexachlorobutadiene	0.14	0.34
Hexachloroethane	0.15	0.38
Naphthalene	0.15	0.41
Nitrobenzene	0.19	0.48
Phenanthrene	0.15	0.41

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Pyrene	0.18	0.47
1,2,4-Trichlorobenzene	0.48	0.98

(*1) These parameters are required by effluent guidelines. However, the limitations in table are not technology-based due to the water quality based effluent limitations being more stringent (See Water Quality Section of Fact Sheet and Appendix B-1).

(*2) Mercury limitations of 0.04 lbs/day Monthly Average and 0.09 lbs/day Daily Maximum have been retained based on the Ouachita River Mercury in Fish Tissue TMDL, issued June 13, 2002 (See Water Quality Section of Fact Sheet and Appendix B-1).

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b. Flow shall be monitored continuously.

PH - established in accordance with LAC 33:IX.1113.C.1. Ph shall be monitored continuously.

BOD_5 - limitations of 310 lbs/day Monthly Average and 820 lbs/day Daily Maximum were retained from the current LPDES permit based on the Ouachita River Basin TMDL for BOD and Nutrients, issued July 1, 2002 (See Water Quality Section of Fact Sheet).

Total Chromium, Total Copper, Total Lead, and Total Zinc - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.401 MGD for Nitroparaffin basics production, 0.332 MGD for Nitroparaffin derivatives and crystal production, 0.029 MGD for the laboratory wastewater, 0.05 MGD for the No. 3, 6, and Pilot Plant cooling tower blowdown, and 0.002 MGD for the Hydrogen Plant blowdown, for a total of 0.814 MGD of metal bearing flow (See Appendix A-1).

Total Nickel and Total Cyanide - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.401 MGD for Nitroparaffin basics production and 0.332 MGD for Nitroparaffin derivatives and crystal production, for a total of 0.733 MGD of metal bearing flow (See Appendix A-1).

TSS, Acrylonitrile, Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroethane, Chloroform, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-trans-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropylyene, Ethylbenzene, Methyl Chloride, Methylene Chloride, Tetrachloroethylene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, 2-Chlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 4,6-Dinitro-o-Cresol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Phenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, 3,4-

Benzofluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Chrysene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Fluoranthene, Fluorene, Hexachlorobutadiene, Hexachloroethane, Naphthalene, Nitrobenzene, Phenanthrene, Pyrene, and 1,2,4-Trichlorobenzene - Monthly Average and Daily Maximum limitations for these parameters have been established to ensure compliance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I.

***Outfall 002 (Phase 2)** - the discharge of Sterlington Plant, Nitration Pilot Plant, and Wet Air Oxidation process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

ANGUS Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Organic chemical manufacturing	40 CFR 414, Subpart(s) H and I

Calculations and basis of permit limitations are found at Appendix A-2, B-2, and associated appendices. See below for site-specific considerations.

PARAMETER	**MONTHLY AVERAGE (lbs/day)**	**DAILY MAXIMUM (lbs/day)**
Flow (MGD)	Report	Report
pH	6.0 (subject to pH excursion requirements)	9.0 (subject to pH excursion requirements)
BOD_5	310(*1)	820(*1)
TSS	474	1510
Total Chromium	0.96(*1)	2.28(*1)
Total Copper	1.22(*1)	2.89(*1)
Total Lead	2.52	5.43
Total Mercury	0.04(*2)	0.09(*2)
Total Nickel	12.16	28.65
Total Zinc	8.27	20.55
Total Cyanide	2.81(*1)	6.67(*1)

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Acrylonitrile	0.78	1.96
Benzene	0.30	1.10
Carbon Tetrachloride	0.15	0.31
Chlorobenzene	0.12	0.23
Chloroethane	0.84	2.17
Chloroform	0.17	0.37
1,1-Dichloroethane	0.18	0.48
1,2-Dichloroethane	0.55	1.71
1,1-Dichloroethylene	0.13	0.20
1,2-trans-Dichloroethylene	0.17	0.44
1,2-Dichloropropane	1.24	1.86
1,3-Dichloropropylyene	0.23	0.36
Ethylbenzene	0.26	0.87
Methyl Chloride	0.70	1.54
Methylene Chloride	0.32	0.72
Tetrachloroethylene	0.18	0.45
Toluene	0.21	0.65
1,1,1-Trichloroethane	0.17	0.44
1,1,2-Trichloroethane	0.17	0.44
Trichloroethylene	0.17	0.44
Vinyl Chloride	0.84	2.17
2-Chlorophenol	0.25	0.79
2,4-Dichlorophenol	0.32	0.91
2,4-Dimethylphenol	0.15	0.29
4,6-Dinitro-o-Cresol	0.63	2.24
2,4-Dinitrophenol	0.57	0.99

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
2-Nitrophenol	0.33	0.56
4-Nitrophenol	0.58	1.00
Phenol	0.12	0.21
Acenaphthene	0.18	0.48
Acenaphthylene	0.18	0.48
Anthracene	0.18	0.48
Benzo (a) anthracene	0.18	0.48
Benzo (a) pyrene	0.19	0.49
3,4-Benzofluoranthene	0.19	0.49
Benzo(k)fluoranthene	0.18	0.48
Bis(2-ethylhexyl)phthalate	0.83	2.26
Chrysene	0.18	0.48
1,2-Dichlorobenzene	0.62	1.32
1,3-Dichlorobenzene	0.25	0.36
1,4-Dichlorobenzene	0.12	0.23
Diethyl phthalate	0.65	1.64
Dimethyl phthalate	0.15	0.38
Di-n-butyl phthalate	0.22	0.46
2,4-Dinitrotoluene	0.91	2.30
2,6-Dinitrotoluene	2.06	5.18
Fluoranthene	0.20	0.55
Fluorene	0.18	0.48
Hexachlorobenzene	0.005(*1)	0.012(*1)
Hexachlorobutadiene	0.16	0.40
Hexachloroethane	0.17	0.44
Naphthalene	0.18	0.48

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Nitrobenzene	0.22	0.55
Phenanthrene	0.18	0.48
Pyrene	0.20	0.54
1,2,4-Trichlorobenzene	0.55	1.13

(*1) These parameters are required by effluent guidelines. However, the limitations in table are not technology-based due to the water quality based effluent limitations being more stringent (See Water Quality Section of Fact Sheet and Appendix B-2).

(*2) Mercury limitations of 0.04 lbs/day Monthly Average and 0.09 lbs/day Daily Maximum have been retained based on the Ouachita River Mercury in Fish Tissue TMDL, issued June 13, 2002 (See Water Quality Section of Fact Sheet and Appendix B-2).

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b. Flow shall be monitored continuously.

PH - established in accordance with LAC 33:IX.1113.C.1. Ph shall be monitored continuously.

BOD_5 - limitations of 310 lbs/day Monthly Average and 820 lbs/day Daily Maximum were retained from the current LPDES permit based on the Ouachita River Basin TMDL for BOD and Nutrients, issued July 1, 2002 (See Water Quality Section of Fact Sheet).

Total Chromium, Total Copper, Total Lead, and Total Zinc - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.531 MGD for Nitroparaffin basics production, 0.332 MGD for Nitroparaffin derivatives and crystal production, 0.029 MGD for the laboratory wastewater, 0.05 MGD for the No. 3, 6, and Pilot Plant cooling tower blowdown, and 0.002 MGD for the Hydrogen Plant blowdown, for a total of 0.944 MGD of metal bearing flow (See Appendix A-2).

Total Nickel and Total Cyanide - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.531 MGD for Nitroparaffin basics production and 0.332 MGD for Nitroparaffin derivatives and crystal production, for a total of 0.863 MGD of metal bearing flow (See Appendix A-2).

TSS, Total Mercury, Total Copper, Acrylonitrile, Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroethane, Chloroform, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-trans-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropylyene, Ethylbenzene, Methyl Chloride, Methylene Chloride, Tetrachloroethylene, Toluene, 1,1,1-

Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, 2-Chlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 4,6-Dinitro-o-Cresol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Phenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, 3,4-Benzofluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Chrysene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Fluoranthene, Fluorene, Hexachlorobutadiene, Hexachloroethane, Naphthalene, Nitrobenzene, Phenanthrene, Pyrene, and 1,2,4 - Trichlorobenzene - Monthly Average and Daily Maximum limitations for these parameters have been established to ensure compliance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I.

***Outfall 002 (Phase 3)** - the discharge of Sterlington Plant, Nitration Pilot Plant, Wet Air Oxidation, and Bicarbonate Wash Water process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

ANGUS Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Organic chemical manufacturing	40 CFR 414, Subpart(s) H and I

Calculations and basis of permit limitations are found at Appendix A-3, B-3, and associated appendices. See below for site-specific considerations.

PARAMETER	**MONTHLY AVERAGE (lbs/day)**	**DAILY MAXIMUM (lbs/day)**
Flow (MGD)	Report	Report
pH	6.0 (subject to pH excursion requirements)	9.0 (subject to pH excursion requirements)
BOD_5	310(*1)	820(*1)
TSS	485	1545
Total Chromium	0.96(*1)	2.29(*1)
Total Copper	1.22(*1)	2.90(*1)
Total Lead	2.58	5.56
Total Mercury	0.04(*2)	0.09(*2)

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Total Nickel	12.49	29.41
Total Zinc	8.47	21.05
Total Cyanide	2.81(*1)	6.68(*1)
Acrylonitrile	0.79	2.00
Benzene	0.31	1.13
Carbon Tetrachloride	0.15	0.31
Chlorobenzene	0.12	0.23
Chloroethane	0.86	2.22
Chloroform	0.17	0.38
1,1-Dichloroethane	0.18	0.49
1,2-Dichloroethane	0.56	1.75
1,1-Dichloroethylene	0.13	0.21
1,2-trans-Dichloroethylene	0.17	0.45
1,2-Dichloropropane	1.27	1.90
1,3-Dichloropropylyene	0.24	0.36
Ethylbenzene	0.26	0.89
Methyl Chloride	0.71	1.57
Methylene Chloride	0.33	0.74
Tetrachloroethylene	0.18	0.46
Toluene	0.22	0.66
1,1,1-Trichloroethane	0.17	0.45
1,1,2-Trichloroethane	0.17	0.45
Trichloroethylene	0.17	0.45
Vinyl Chloride	0.86	2.22
2-Chlorophenol	0.26	0.81
2,4-Dichlorophenol	0.32	0.93

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
2,4-Dimethylphenol	0.15	0.30
4,6-Dinitro-o-Cresol	0.65	2.29
2,4-Dinitrophenol	0.59	1.02
2-Nitrophenol	0.34	0.57
4-Nitrophenol	0.60	1.03
Phenol	0.12	0.22
Acenaphthene	0.18	0.49
Acenaphthylene	0.18	0.49
Anthracene	0.18	0.49
Benzo (a) anthracene	0.18	0.49
Benzo (a) pyrene	0.19	0.50
3,4-Benzofluoranthene	0.19	0.50
Benzo(k)fluoranthene	0.18	0.49
Bis(2-ethylhexyl)phthalate	0.85	2.31
Chrysene	0.18	0.49
1,2-Dichlorobenzene	0.64	1.35
1,3-Dichlorobenzene	0.26	0.36
1,4-Dichlorobenzene	0.12	0.23
Diethyl phthalate	0.67	1.68
Dimethyl phthalate	0.16	0.39
Di-n-butyl phthalate	0.22	0.47
2,4-Dinitrotoluene	0.94	2.36
2,6-Dinitrotoluene	2.11	5.31
Fluoranthene	0.21	0.56
Fluorene	0.18	0.49
Hexachlorobenzene	0.005(*2)	0.012(*2)

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Hexachlorobutadiene	0.17	0.41
Hexachloroethane	0.17	0.45
Naphthalene	0.18	0.49
Nitrobenzene	0.22	0.56
Phenanthrene	0.18	0.49
Pyrene	0.21	0.55
1,2,4-Trichlorobenzene	0.56	1.16

(*1) These parameters are required by effluent guidelines. However, the limitations in table are not technology-based due to the water quality based effluent limitations being more stringent (See Water Quality Section of Fact Sheet and Appendix B-3).

(*2) Mercury limitations of 0.04 lbs/day Monthly Average and 0.09 lbs/day Daily Maximum have been retained based on the Ouachita River Mercury in Fish Tissue TMDL, issued June 13, 2002 (See Water Quality Section of Fact Sheet and Appendix B-3).

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b. Flow shall be monitored continuously.

PH - established in accordance with LAC 33:IX.1113.C.1. Ph shall be monitored continuously.

BOD_5 - limitations of 310 lbs/day Monthly Average and 820 lbs/day Daily Maximum were retained from the current LPDES permit based on the Ouachita River Basin TMDL for BOD and Nutrients, issued July 1, 2002 (See Water Quality Section of Fact Sheet).

Total Chromium, Total Copper, Total Lead, and Total Zinc - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subpart H for metal bearing wastestreams. The flows used for this calculation are 0.554 MGD for Nitroparaffin basics production, 0.332 MGD for Nitroparaffin derivatives and crystal production, 0.029 MGD for the laboratory wastewater, 0.05 MGD for the No. 3, 6, and Pilot Plant cooling tower blowdown, and 0.002 MGD for the Hydrogen Plant blowdown, for a total of 0.967 MGD of metal bearing flow (See Appendix A-3).

Total Nickel and Total Cyanide - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.554 MGD for Nitroparaffin basics production and 0.332 MGD for Nitroparaffin derivatives and crystal production, for a total of 0.886 MGD of metal bearing flow (See Appendix A-3).

TSS, Total Mercury, Acrylonitrile, Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroethane, Chloroform, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-trans-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropylyene, Ethylbenzene, Methyl Chloride, Methylene Chloride, Tetrachloroethylene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, 2-Chlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 4,6-Dinitro-o-Cresol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Phenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, 3,4-Benzofluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Chrysene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Fluoranthene, Fluorene, Hexachlorobutadiene, Hexachloroethane, Naphthalene, Nitrobenzene, Phenanthrene, Pyrene, and 1,2,4-Trichlorobenzene - Monthly Average and Daily Maximum limitations for these parameters have been established to ensure compliance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I.

***Internal Outfall 102 (applicable to Final Outfall 002 Phases 1, 2, and 3)** - the discharge of sanitary wastewater.

Sanitary wastewaters (internal or external) are regulated in accordance with LAC 33:IX.711 or 709.B, by BPJ utilizing the sanitary general permits issued by this Office, and the Louisiana Water Quality Management Plan, Appendices A (Areawide Sanitary Effluent Limits Policy) and B (Statewide Sanitary Effluent Limits Policy), as applicable.

PARAMETER	**MONTHLY AVERAGE**	**WEEKLY AVERAGE**
Flow (MGD)	Report	Report
Fecal Coliform colonies/100 ml	---	400

Site-Specific Consideration(s)

This outfall was established as a sampling point for fecal coliform in the current LPDES permit, effective on April 1, 2002 to ensure adequate treatment for this pollutant at the internal outfall. Other parameters associated with sanitary discharges (BOD_5 and TSS) have been applied at the final outfall.

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

Fecal Coliform - this limitation has been retained from the current LPDES permit, effective on April 1, 2002.

2. Outfalls 004, 005, and 105 - Utility Wastewaters & Stormwater

* **Outfall 004** - the discharge of non-process stormwater; utility wastewaters including clean water from hydrotesting, steam condensate, safety shower water, eye bath water, and miscellaneous washdown waters; and uncontaminated deionized water, potable water, river water used as firewater, and clarified water.

Utility wastewaters and stormwater being discharged to discrete outfalls receive BPJ limitations/monitoring requirements according to the following schedule:

PARAMETER	MONTHLY AVERAGE MG/L	DAILY MAXIMUM MG/L
Flow, MGD	Report	Report
TOC	---	50
Oil & Grease	---	15
Ammonia (as N)	4	8
pH Standard Units	6.0 (min)	9.0 (max)

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

PH - established in accordance with LAC 33:IX.1113.C.1.

TOC and Oil & Grease - These limitations were retained from the current LPDES permit, effective on April 1, 2002 and have been applied based on BPJ in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6) and similarly permitted discharges.

Ammonia (as N) - Limitations for this parameter were retained from the current LPDES permit, effective on April 1, 2002. According to the current permit, the facility has a history of periodic discharges of ammonia at levels that have a reasonable potential to cause or contribute to an excursion above a narrative criterion for the receiving water. Based on 40 CFR 122.44(d)(1)(vi), which requires the permitting authority to establish specific pollutant effluent limits that can cause an excursion above a narrative criterion, Region VI has established limits for ammonia at the edge of the mixing zone of 4 mg/l monthly average and 8 mg/l daily maximum. Based on the fact that the critical flow of Sterlington Ditch is 0 (zero) cfs, the discharge must meet these limits at the end of pipe. Therefore, based on BPJ the facility will continue to be required to meet ammonia limits at Outfall 004 of 4 mg/l monthly average and 8 mg/l daily maximum.

In accordance with LAC 33:IX.2707.I.3 and [40 CFR 122.44(I)(3) and (4)], a Part II condition is proposed for applicability to all storm water discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet

flow. The Part II condition requires a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit, along with other requirements. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference to the SWP3. Examples of these type plans include, but are not limited to: Spill Prevention Control and Countermeasures Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. The conditions will be found in the draft permit. Including Best Management Practice (BMP) controls in the form of a SWP3 is consistent with other LPDES and EPA permits regulating similar discharges of stormwater associated with industrial activity, as defined in LAC 33:IX.2522.B.14 [40 CFR 122.26(b)(14)].

***Outfall 005** -the discharge of clarifier underflow (ultra filtration reject water) and previously sampled utility wastewaters from Internal Outfall 105.

PARAMETER	**MONTHLY AVERAGE MG/L**	**DAILY MAXIMUM MG/L**
Flow, MGD	Report	Report
pH	6.0	9.0
Coagulents	Inventory Calculation	Inventory Calculation

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b. Flow shall be monitored continuously.

PH - established in accordance with LAC 33:IX.1113.C.1. Ph shall be monitored continuously.

Coagulents - reporting requirement established based on best professional judgment and similarly permitted discharges. These records shall be retained for three years. No DMR reporting required.

***Internal Outfall 105** - utility wastewaters including boiler blowdown and boiler samples; BJ-29 Sump wastewater (wastewater from oil storage, centax area, and water treatment areas); reverse osmosis reject/cleaning and/or demineralizer backwash/regeneration; and once through cooling water, including from the electric and diesel air compressors, boiler feedwater pumps, the Bingham BFW pump, and boiler ID/OD fans with final discharge through Outfall 005.

Utility wastewaters being discharged to discrete outfalls receive BPJ limitations/monitoring requirements according to the following schedule:

PARAMETER	MONTHLY AVERAGE MG/L	DAILY MAXIMUM MG/L
Flow, MGD	Report	Report
Free Available Chlorine		0.5
TOC	---	50
Oil & Grease	---	15

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

Free Available Chlorine (FAC) - This Daily Maximum limitation has been retained from the current LPDES permit, effective on April 1, 2002 (modification effective on December 1, 2005). FAC was previously established in accordance with 40 CFR 423.13 for cooling discharges under the steam electric power generating point source category. These guidelines establish free available chlorine as the parameter of choice when chlorine is used as an additive. Since the discharges of cooling water at ANGUS are similar in nature to those covered in 40 CFR 423.13 and chlorine is used as an additive, FAC was established based on best professional judgment (BPJ).

TOC and Oil & Grease - These limitations were retained from the current LPDES permit, effective on April 1, 2002 (modification effective on December 1, 2005) and have been applied based on similarly permitted discharges and best professional judgment (BPJ).

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations and/or specific analytical results from the permittee's application were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. Calculations, results, and documentation are given in Appendix B.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in Appendix B.
The following pollutants received water quality based effluent limits:

PARAMETER(S)
BOD_5
Total Mercury
Total Chromium
Total Copper
Total Cyanide
Hexachlorobenzene

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

WATER QUALITY LIMITATIONS BY OUTFALL

1. Outfalls 002 and 102 - Process Wastewaters & Internal Sanitary Wastewater

***Outfall 002 (Phase 1)** - the discharge of Sterlington Plant and Nitration Pilot Plant process wastewater, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
BOD_5	310	820
Total Chromium	0.95	2.27
Total Copper	1.21	2.87
Total Mercury	0.04	0.09
Total Cyanide	2.57(*)	6.62
Hexachlorobenzene	0.005	0.012

(*) Technology limitation was more stringent (See Technology Section of the Fact Sheet and Appendix A-1).

***Outfall 002 (Phase 2)** - the discharge of Sterlington Plant, Nitration Pilot Plant, and Wet Air Oxidation process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
BOD_5	310	820
Total Chromium	0.96	2.28
Total Copper	1.22	2.89
Total Mercury	0.04	0.09
Total Cyanide	2.81	6.67
Hexachlorobenzene	0.005	0.012

***Outfall 002 (Phase 3)** - the discharge of Sterlington Plant, Nitration Pilot Plant, Wet Air Oxidation, and Bicarbonate Wash Water process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
BOD_5	310	820
Total Chromium	0.96	2.29
Total Copper	1.22	2.90
Total Mercury	0.04	0.09
Total Cyanide	2.81	6.68
Hexachlorobenzene	0.005	0.012

See below for site-specific considerations for Outfall 002 Phases 1, 2, and 3.

Site-Specific Consideration(s) for Phases 1, 2, and 3

BOD_5 - limitations of 310 lbs/day Monthly Average and 820 lbs/day Daily Maximum were retained from the current LPDES permit based on the Ouachita River Basin TMDL for BOD and Nutrients, issued July 1, 2002. A portion of the Margin of Safety (22 lbs.) has been utilized because the TMDL states that no reduction is needed for this facility. However, upon review, it appears that the TMDL was based off of a value applied in a proposed draft permit instead of a final permit. The Monthly Average in the final permit was 22 lbs. higher than what was used in the model.

Total Chromium, Total Copper, Total Cyanide, and Hexachlorobenzene - The technology limitations calculated in accordance with the OCPSF Guidelines under 40 CFR 414, Subpart I, were screened against the current water quality standards. The water quality based effluent limitations were more stringent than the technology limitations, therefore, water quality limitations were established.

Mercury limitations of 0.04 lbs/day Monthly Average and 0.09 lbs/day Daily Maximum have been retained based on the Ouachita River Mercury in Fish Tissue TMDL, issued June 13, 2002. The TMDL states that no reductions are necessary, but prior Mercury limitations should be retained.

***Internal Outfall 102 (applicable to Final Outfall 002 Phases 1, 2, and 3)** - the discharge of sanitary wastewater.

PARAMETER(S)
None

2. Outfalls 004, 005, and 105 - Utility Wastewaters & Stormwater

* **Outfall 004** - the discharge of non-process stormwater; utility wastewaters including clean water from hydrotesting, steam condensate, safety shower water, eye bath water, and miscellaneous washdown waters; and uncontaminated deionized water, potable water, river water used as firewater, and clarified water.

PARAMETER(S)
None

***Outfall 005** -the discharge of clarifier underflow (ultra filtration reject water) and previously sampled utility wastewaters from Internal Outfall 105.

PARAMETER(S)
None

***Internal Outfall 105** - utility wastewaters including boiler blowdown and boiler samples; BJ-29 Sump wastewater (wastewater from oil storage, centax area, and water treatment areas); reverse osmosis reject/cleaning and/or demineralizer backwash/regeneration; and once through cooling water, including from the electric and diesel air compressors, boiler feedwater pumps, the Bingham BFW pump, and boiler ID/OD fans with final discharge through Outfall 005.

PARAMETER(S)
None

TMDL Waterbodies

Outfalls 002, 004, and 005

The discharges include process wastewater; Hydrogen Plant blowdown; cooling tower blowdown; air pollution control scrubber water; sanitary wastewater; laboratory wastewater; dry weather ditch wastewater; miscellaneous washdown water; rinse water; and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes **(Outfall 002 Phases 1, 2, and 3)**, non-process stormwater; utility wastewaters including clean water from hydrotesting, steam condensate, safety shower water, eye bath water, and miscellaneous washdown waters; and uncontaminated deionized water, potable water, river water used as firewater, and clarified water **(Outfall 004)**, and utility wastewaters including clarifier underflow (ultra filtration reject water), boiler blowdown and boiler samples, BJ-29 Sump wastewater (wastewater from oil storage, centax area, and water treatment areas), reverse osmosis reject/cleaning and/or demineralizer backwash/regeneration, and once through cooling water from the electric and diesel air compressors, boiler feedwater pumps, the Bingham BFW pump, and boiler ID/OD fans **(Outfall 005)** are to Ouachita River, Segment No. 080101. The Ouachita River is listed on the 303(d) report as being impaired with mercury, organic enrichment/low DO, nutrients, and phosphorus. Two TMDLS have been completed to date covering the mercury, organic enrichment/low DO, nutrients, and phosphorus impairments.

Organic Enrichment/Low DO, Nutrients, and Phosphorus
These impairments were addressed in the Ouachita River Basin TMDL for BOD and Nutrients, issued July 1, 2002.

Outfall 002 - BOD_5 limitations of 310 lbs/day Monthly Average and 820 lbs/day Daily Maximum were retained from the current LPDES permit. A portion of the Margin of Safety (22 lbs.) has been utilized because the TMDL states that no reduction is needed for this facility. However, upon review, it appears that the TMDL was based off of a value applied in a proposed draft permit instead of a final permit. The Monthly Average in the final permit was 22 lbs. higher than what was used in the model.

Outfall 004 and Internal Outfall 105, via Final Outfall 005 - utility wastewaters were not considered in the TMDL model for organic enrichment/low Do and did not receive wasteload allocations for those outfalls. However, TOC is a means of measuring organic materials in a discharge, therefore, the daily maximum limit of 50 mg/L TOC has been retained from the

current LPDES permit effective on April 1, 2002 for both outfalls.

Mercury
The mercury impairment has been addressed by the Ouachita River Mercury in Fish Tissue TMDL, issued June 13, 2002.

Outfall 002 - Mercury limitations of 0.04 lbs/day Monthly Average and 0.09 lbs/day Daily Maximum have been retained based on the Ouachita River Mercury in Fish Tissue TMDL, issued June 13, 2002. The TMDL states that no reductions are necessary, but prior Mercury limitations should be retained.

Outfall 004 and Internal Outfall 105, via Final Outfall 005 - utility wastewaters were not considered in the TMDL model for mercury and did not receive wasteload allocations for those outfalls. Therefore, no additional requirements were place on Outfalls 004, 005, and 105 as a result of this TMDL.

Monitoring frequencies for water quality based limited parameters are established in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

Site-Specific Consideration(s)

Federal regulations under 40 CFR 130.7 require the State to incorporate all final TMDLs into its current Water Quality Management Plan (WQMP). The State is also required to ensure consistency with the WQMP requirements approved by EPA under Section 208(b) of the Clean Water Act (CWA), as cited under LAC 33.IX.2707.D.6. Since the requirements established in the Final TMDL (Federal Register Notice: Volume 67, Number 114, pages 40735 - 40737, 6/13/2002) are water quality-based effluent limitations that are part of the State's current Water Quality Management Plan (Volume 8), and are more stringent than the technology based effluent limitations, the TMDL waste load allocations must remain in the permit.

a. Biomonitoring Requirements

It has been determined that there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream. The State of Louisiana has established a narrative criteria which states, "toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life." The Office of Environmental Services requires the use of the most recent EPA biomonitoring protocols.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit for Outfall(s) 002 and 005 are as follows:

TOXICITY TESTS	FREQUENCY
Acute static renewal 48-hour definitive toxicity test using Daphnia pulex	1/quarter
Acute static renewal 48-hour definitive toxicity test using fathead minnow (Pimephales promelas)	1/quarter

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge in accordance with regulations promulgated at LAC 33:IX.2715/40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit. The permit requires the submission of certain toxicity testing information as an attachment to the Discharge Monitoring Report.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.3105/40 CFR 124.5. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

Dilution Series

Outfall 002 (Phases 1, 2, and 3)
The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 3%, 4%, 5%, 6%, and 9%. The low-flow effluent concentration (critical dilution) is defined as 6% effluent.

Outfall 005
The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 0.5%, 0.7%, 0.9%, 1%, and 2%. The low-flow effluent concentration (critical dilution) is defined as 1% effluent.

D. MONITORING FREQUENCIES

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(i)]. The following section(s) explain the rationale for the monitoring frequencies stated in the draft permit.

1. Outfalls 002 and 102 - Process Wastewaters and Sanitary Wastewater

***Outfall 002 (Phase 1)** - the discharge of Sterlington Plant and Nitration Pilot Plant process wastewater, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

***Outfall 002 (Phase 2)** - the discharge of Sterlington Plant, Nitration Pilot Plant, and Wet Air Oxidation process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

***Outfall 002 (Phase 3)** - the discharge of Sterlington Plant, Nitration Pilot Plant, Wet Air Oxidation, and Bicarbonate Wash Water process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

Flow and pH shall be monitored continuously. These monitoring frequencies were retained from the current LPDES permit, effective on April 1, 2002.

PARAMETER(S)	MONITORING FREQUENCY
Flow	Continuous
pH	Continuous

ANGUS has requested monitoring frequency reductions for BOD_5 and TSS from

2/week to 1/month and for Total Nickel from 1/week to 2/month in accordance with the USEPA Memorandum "Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies." Although ANGUS does qualify for the requested reductions, the Department has determined that 1/month sampling is not an adequate frequency for conventional and non-conventional parameters for major facilities. Therefore, the frequency for BOD_5 and TSS has been reduced from 2/week to 1/week. A monitoring frequency of 1/week for the following listed pollutants is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7.

PARAMETER(S)	MONITORING FREQUENCY
BOD5	1/week
TSS	1/week

The frequency for Total Nickel has been reduced from 1/week to 2/month in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies." A monitoring frequency of 1/month is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7.

PARAMETER(S)	MONITORING FREQUENCY
Total Nickel	2/month

Total Chromium, Total Copper, Total Lead, Total Mercury, and Total Cyanide - Those toxic pollutants indicated as being discharged well below the proposed draft permit limits are proposed to monitored 1/quarter. These monitoring frequencies were retained from the current LPDES permit, effective on April 1, 2002.

PARAMETER(S)	MONITORING FREQUENCY
Total Chromium	1/quarter
Total Copper	1/quarter
Total Lead	1/quarter
Total Mercury	1/quarter
Total Cyanide	1/quarter

Total Zinc, Acrylonitrile, Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroethane, Chloroform, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-trans-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropylyene, Ethylbenzene, Methyl Chloride, Methylene Chloride, Tetrachloroethylene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane,

Trichloroethylene, Vinyl Chloride, 2-Chlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 4,6-Dinitro-o-Cresol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Phenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, 3,4-Benzofluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Chrysene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Fluoranthene, Fluorene, Hexachlorobenzene, Hexachlorobutadiene, Hexachloroethane, Naphthalene, Nitrobenzene, Phenanthrene, Pyrene, and 1,2,4-Trichlorobenzene - Toxic pollutants not expected to be on-site are proposed to be monitored once per year. These monitoring frequencies were retained from the current LPDES permit, effective on April 1, 2002.

PARAMETER(S)	**MONITORING FREQUENCY**
Total Zinc	1/year
Acrylonitrile	1/year
Benzene	1/year
Carbon Tetrachloride	1/year
Chlorobenzene	1/year
Chloroethane	1/year
Chloroform	1/year
1,1-Dichloroethane	1/year
1,2-Dichloroethane	1/year
1,1-Dichloroethylene	1/year
1,2-*trans*-Dichloroethylene	1/year
1,2-Dichloropropane	1/year
1,3-Dichloropropylene	1/year
Ethylbenzene	1/year
Methyl Chloride	1/year
Methylene Chloride	1/year
Tetrachloroethylene	1/year
Toluene	1/year
1,1,1-Trichloroethane	1/year
1,1,2-Trichloroethane	1/year

PARAMETER(S)	MONITORING FREQUENCY
Trichloroethylene	1/year
Vinyl Chloride	1/year
2-Chlorophenol	1/year
2,4-Dichlorophenol	1/year
2,4-Dimethylphenol	1/year
4,6-Dinitro-o-cresol	1/year
2,4-Dinitrophenol	1/year
2-Nitrophenol	1/year
4-Nitrophenol	1/year
Phenol	1/year
Acenaphthene	1/year
Acenaphthylene	1/year
Anthracene	1/year
Benzo (a) anthracene	1/year
Benzo (a) pyrene	1/year
3,4-Benzofluoranthene	1/year
Benzo(k)fluoranthene	1/year
Bis(2-ethylhexyl)phthalate	1/year
Chrysene	1/year
1,2-Dichlorobenzene	1/year
1,3-Dichlorobenzene	1/year
1,4-Dichlorobenzene	1/year
Diethyl phthalate	1/year
Dimethyl phthalate	1/year
Di-n-butyl phthalate	1/year
2,4-Dinitrotoluene	1/year
2,6-Dinitrotoluene	1/year

PARAMETER(S)	MONITORING FREQUENCY
Fluoranthene	1/year
Fluorene	1/year
Hexachlorobenzene	1/year
Hexachlorobutadiene	1/year
Hexachloroethane	1/year
Naphthalene	1/year
Nitrobenzene	1/year
Phenanthrene	1/year
Pyrene	1/year
1,2,4-Trichlorobenzene	1/year

***Internal Outfall 102 (applicable to Final Outfall 002 Phases 1, 2, and 3)** - the discharge of sanitary wastewater.

Flow shall be monitored 1/month. This monitoring frequency was retained from the current LPDES permit, effective on April 1, 2002.

PARAMETER	MONITORING FREQUENCY
Flow	1/month

The frequency for fecal coliform has been reduced from 1/month to 1/6 months in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies." Thirty (30) fecal coliform samples were taken/reported on DMRs from January 2005 to August 2007. All values were zero (0). Therefore, the ANGUS request to reduce monitoring from 1/month to 1/6 months for fecal coliform has been granted.

PARAMETER	MONITORING FREQUENCY
Fecal Coliform	1/6 months

2. Outfalls 004, 005, and 105 - Utility Wastewaters & Stormwater

*** Outfall 004** - the discharge of non-process stormwater; utility wastewaters including clean water from hydrotesting, steam condensate, safety shower water, eye bath water, and miscellaneous washdown waters; and uncontaminated deionized water, potable water, river water used as firewater, and clarified water.

Flow - this monitoring frequency has been changed from continuous to 1/week due to the discharges being intermittent in nature.

TOC - shall be monitored 1/week. This monitoring frequency was retained from the current LPDES permit, effective on April 1, 2002.

PARAMETER(S)	MONITORING FREQUENCY
Flow	1/week
TOC	1/week

Oil & Grease and Ammonia (as N) - The frequency for Oil & Grease and Ammonia has been reduced from 1/week to 1/month in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies."

PARAMETER(S)	MONITORING FREQUENCY
Oil & Grease	1/month
Ammonia (as N)	1/month

pH - shall be monitored 1/quarter. This monitoring frequency was retained from the current LPDES permit, effective on April 1, 2002.

PARAMETER(S)	MONITORING FREQUENCY
pH	1/quarter

***Outfall 005** - the discharge of clarifier underflow (ultra filtration reject water) and previously sampled utility wastewaters from Internal Outfall 105.

Flow and pH shall be monitored continuously. These monitoring frequencies were retained from the current LPDES permit, effective on April 1, 2002.

PARAMETER(S)	MONITORING FREQUENCY
Flow	Continuous
pH	Continuous

***Internal Outfall 105** - utility wastewaters including boiler blowdown and boiler samples; BJ-29 Sump wastewater (wastewater from oil storage, centax area, and water treatment areas); reverse osmosis reject/cleaning and/or demineralizer backwash/regeneration; and once through cooling water, including from the electric and diesel air compressors, boiler feedwater pumps, the Bingham BFW pump, and boiler ID/OD fans with final discharge through Outfall 005.

Flow, Free Available Chlorine, TOC, and Oil & Grease - shall be monitored 1/week. These monitoring frequencies were retained from the current LPDES permit, effective on April 1, 2002.

PARAMETER(S)	MONITORING FREQUENCY
Flow	1/week
Free Available chlorine	1/week
TOC	1/week
Oil & Grease	1/week

X. Compliance History/DMR Review:

A compliance history/DMR review was done covering the period of January 2005 to August 2007.

A. DMR Excursions Reported

DATE	PARAMETER	OUTFALL	REPORTED VALUE	PERMIT LIMITS
03/31/05	Phenol	002	0.16 lbs/day Monthly Average	0.10 lbs/day Monthly Average
04/30/05	TOC	004	117 mg/L Daily Maximum	50 mg/L Daily Maximum
12/31/05	Phenol	002	0.132 lbs/day Monthly Average	0.10 lbs/day Monthly Average
03/31/06	Phenol	002	0.132 lbs/day Monthly Average	0.10 lbs/day Monthly Average
04/30/06	TOC	004	52 mg/L Daily Maximum	50 mg/L Daily Maximum
04/30/07	TOC	004	62 mg/L Daily Maximum	50 mg/L Daily Maximum

B. Inspections - A facility inspection was conducted on November 13, 2006. The following items were noted in the inspection report:

> A review of DMRs from October 2005 to the present revealed the TOC limit was exceeded at Outfall 004 in April 2006 with a value of 52 ppm.

C. Compliance History - None

XI. "IT" Questions

IT Questions and ANGUS Chemical Company's responses can be found in the permit application addendum dated May 2007, Appendix E.

XII. Endangered Species:

The receiving waterbody, Subsegment 080101 of the Ouachita River Basin is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated October 24, 2007 from Boggs (FWS) to Brown (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

XIII. Historic Sites:

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

XIV. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to permit for the discharge described in the application.

XV. Variances:

No requests for variances have been received by this Office.

XVI. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheets. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

Appendix A

Revised 03/27/02 LA0007854, AI1556 Appendix A-1 Page 1

10/11/2007 Calculation of Technology Based Limits for

(*1) TABLE 1

Permittee:

Permit Number:	LA0007854, AI1556
Appendix	Appendix A-1
[] Flow Basis 1=proc, 0=all	0
Concentration flow, (MGD)	---
GL vs Old, 0=n, 1=y, 2=GL+Old	1
Outfall number	Out. 002 Phase 1
Deepwell fract., 40 CFR 122.50	

(*2)

OCPSF Subpart I=1, J=2	1	
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
Nitroparaffin Basics Production	0.401	
Nitroparaffin Derivitives & Cry	0.332	
Lab Wastewater	0.029	
Dry Weather Ditch Flow	0.0774	
TOTAL PROCESS FLOW:	0.8394	---
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:	0.0286	
MISCELLANEOUS:	MGD	gpm
TOTAL MISCELLANEOUS FLOWS:	---	---
UTILITY WASTEWATER:	MGD	gpm
No. 3, 6, and Pilot Plant CTBD	0.05	
Hydrogen Plant Blowdown	0.002	
TOTAL UTILITY WW FLOWS:	0.052	---
TOTAL OCPSF+BPJ FLOW:	0.92	---

(*3) Fraction of OCPSF Conc. or BPJ []

Fract =0, []=1	0	BOD,avg	BOD,max	TSS,avg	TSS,max
Miscellaneous WW		0.5	0.5	0.5	0.5
Misc. WW, mg/L		5	10	10	20
Utility WW		0.25	0.25	0.25	0.25
Utility WW, mg/L		5	10	10	20
Sanitary, mg/L		30	45	30	45

(*4)

Metal+CN Flows:	MGD	gpm
Total Chromium	0.814	
Total Copper	0.814	
Total Lead	0.814	
Total Nickel	0.733	
Total Zinc	0.814	
Total Cyanide	0.733	

(*5)

OCPSF Guideline Subpart:	Prod. 1000 lbs per day	Prod. Fraction of Total
B, Rayon Fibers		---
C, Other Fibers		---
D, Thermoplastic Resins		---
E, Thermosetting Resins		---
F, Commodity Organics		---
G, Bulk Organics		---
H, Specialty Organics		1
Total:	---	1

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio		
TOC/BOD5 ratio		
COD,TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L		

(*7)

INORGANIC GUIDELINES:

New Source 1=y 0=n	0	Prod.			OCPSF BOD5	
O Fraction=0, []=1	0	1000 lbs	Flow	Flow	OCPSF Fraction	
40 CFR 415		per day	MGD	gpm	Avg	Max
40 CFR 415.63 Mercury					1	1
40 CFR 415.63 Diaphragm					1	1
					1	1
					1	1

(*8)

OCPSF Alternate Flows:	MGD
Conventionals:	
Organic Toxics:	---
Process Waste Water	
Process Stormwater	

(*9)

Page and Table Numbering	1=y, 0=n
1st Input Page	1
2nd Input Page	0
OCPSF	1
SS Metals	0
Inorganic	0
Fertilizer	0
Pesticides	0
COD/TOC/O&G Tbl	0
BOD/TSS Tbl	1
Table Designation Sequence	
Pesticides &OCPSF	0
PestMetal 1=y,0=n	0

Flow (*10)

MGD	COD and TOC limits, precalc	
---	COD,Avg (lbs/day)	0
---	COD,Max (lbs/day)	0
---	TOC,Avg (lbs/day)	0
	TOC,Max (lbs/day)	0

Conversion Factors:

Conv mg/L-->lbs/da	8.34
Conv ug/L-->mg/L:	0.0001
Conv gpm-->MGD:	0.00144

OCPSF+Inorganic 0.92

Calculation of Technology Based Limits for

Out. 002 Phase 1

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414 Subpart:	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg mg/L	TSS Max mg/L	Prod. 1000 lbs per day	Prod. Fraction of Total	Process Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D,Thermoplastic Resins							---	8.34	---	---	---	---
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics	45	120	57	183		1	0.8394	8.34	315.0268	840.0715	399.034	1281.109
Total/Weighted[]	45	120	57	183		1	0.8394	8.34	315.0268	840.0715	399.034	1281.109

BPJ Sources/Guidelines BPJ Sources:	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg mg/L	TSS Max mg/L	Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
Sanitary WW:	30	45	30	45	0.0286	8.34	7.15572	10.73358	7.15572	10.73358
Miscellaneous:					---	8.34	---	---	---	---
Utility Wastewater:	22.5	60	57	183	0.052	8.34	9.7578	26.0208	24.71976	79.36344
					---	8.34	---	---	---	---
					---	8.34	---	---	---	---
					---	8.34	---	---	---	---
BPJ Source Total:					0.0806		16.91352	36.75438	31.87548	90.09702

Other Guidelines: Inorganic 40 CFR 415	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg lbs/1000	TSS Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---

	BOD5 Avg lbs/1000	BOD5 Max lbs/1000	TSS Avg lbs/1000	TSS Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Flow (MGD)	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
					---	---	---	---	---	---	---
					---	---		---	---	---	---
					---	---		---	---	---	---
Other Guideline Total (lbs/day)							---	---	---	---	---
BOD5/TSS Grand Total (lbs/day)							0.92	331.9403	876.8259	430.9095	1371.206

LA0007854, AI1556 Appendix A-1

Calculation of Technology Based Limits for

Out. 002 Phase 1

TABLE 3

Calculation Summary of Conventional and Non-Conventional Limits

(*1) Parameter	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 002 Avg lbs/day	(*11) Out. 002 Max lbs/day	(*12) Out. 002 Avg mg/L	(*13) Out. 002 Max mg/L
CONVENTIONAL												
BOD5 [*1]				331.9403	876.8259	310	820	1	310	820	---	---
TSS				430.9095	1371.206			---	431	1371	---	---
Oil and Grease				---	---			---	---	---	---	---
NON-CONVENTIONAL												
COD				---	---				---	---	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				--	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 002 Avg lbs/day	(*11) Out. 002 Max lbs/day	(*12) Out. 002 Avg mg/L	(*13) Out. 002 Max mg/L
METALS AND CYANIDE												
Total Chromium	1.11	2.77	0.814	7.535524	18.80487			---	7.54	18.80	---	
Total Copper	1.45	3.38	0.814	9.843702	22.94601			---	9.84	22.95	---	---
Total Lead	0.32	0.69	0.814	2.172403	4.684244			---	2.17	4.68	---	---
Total Nickel	1.69	3.98	0.733	10.33134	24.33062			---	10.33	24.33	---	---
Total Zinc	1.05	2.61	0.814	7.128198	17.71866			---	7.13	17.72	---	---
Total Mercury				---	---			---	---	---	---	
Total Cyanide	0.42	1.2	0.733	2.567552	7.335864			---	2.57	7.34	---	---
Amenable Cyanide				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

[*1] Limitation retained from previous permit based on the Ouichita River Basin TMDL for BOD and nutrients, issued July 1, 2002. A portion of the Margin of Safety (22 lbs.) was used because the TMDL states that no reduction is needed for this facility, however, the TMDL was based off of a value in the draft permit. The Monthly Average in final permit was 22 lbs. higher than the draft.

Calculation of Technology Based Limits for

Out. 002 Phase 1

Calculation of Toxic Limits, OCPSF Subpart I

TABLE 4

(*1) OCPSF Parameter Subpart I	(*2) G/L Val Avg. mg/L	(*3) G/L Val Max mg/L	(*4) Process Flow (MGD)	(*5) G/L Val Avg lbs/day	(*6) G/L Val Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old G/L-BPJ Max0=no scr. 1=OldvsGL 2=Old+GL	(*9) Out. 002 Avg lbs/day	(*10) Out. 002 Max lbs/day	(*11) Out. 002 Avg mg/L	(*12) Out. 002 Max mg/L
VOLATILE COMPOUNDS											
Acrylonitrile	0.096	0.242	0.8394	0.672057	1.694144		---	0.67	1.69	---	---
Benzene	0.037	0.136	0.8394	0.259022	0.952081		---	0.26	0.95	---	---
Carbon Tetrachloride	0.018	0.038	0.8394	0.126011	0.266023		---	0.13	0.27	---	---
Chlorobenzene	0.015	0.028	0.8394	0.105009	0.196017		---	0.11	0.20	---	---
Chloroethane	0.104	0.268	0.8394	0.728062	1.87616		---	0.73	1.88	---	---
Chloroform	0.021	0.046	0.8394	0.147013	0.322027		---	0.15	0.32	---	---
1,1-Dichloroethane	0.022	0.059	0.8394	0.154013	0.413035		---	0.15	0.41	---	---
1,2-Dichloroethane	0.068	0.211	0.8394	0.476041	1.477126		---	0.48	1.48	---	---
1,1-Dichloroethylene	0.016	0.025	0.8394	0.11201	0.175015		---	0.11	0.18	---	---
1,2-trans-Dichloro-ethylene	0.021	0.054	0.8394	0.147013	0.378032		---	0.15	0.38	---	---
1,2-Dichloropropane	0.153	0.23	0.8394	1.071091	1.610137		---	1.07	1.61	---	---
1,3-Dichloropropylene	0.029	0.044	0.8394	0.203017	0.308026		---	0.20	0.31	---	---
Ethylbenzene	0.032	0.108	0.8394	0.224019	0.756064		---	0.22	0.76	---	---
Methyl Chloride	0.086	0.19	0.8394	0.602051	1.330113		---	0.60	1.33	---	---
Methylene Chloride	0.04	0.089	0.8394	0.280024	0.623053		---	0.28	0.62	---	---
Tetrachloroethylene	0.022	0.056	0.8394	0.154013	0.392033		---	0.15	0.39	---	---
Toluene	0.026	0.08	0.8394	0.182015	0.560048		---	0.18	0.56	---	---
1,1,1-Trichloroethane	0.021	0.054	0.8394	0.147013	0.378032		---	0.15	0.38	---	---
1,1,2-Trichloroethane	0.021	0.054	0.8394	0.147013	0.378032		---	0.15	0.38	---	---
Trichloroethylene	0.021	0.054	0.8394	0.147013	0.378032		---	0.15	0.38	---	---
Vinyl Chloride	0.104	0.268	0.8394	0.728062	1.87616		---	0.73	1.88	---	---
ACID COMPOUNDS											
2-Chlorophenol	0.031	0.098	0.8394	0.217018	0.686058		---	0.22	0.69	---	---
2,4-Dichlorophenol	0.039	0.112	0.8394	0.273023	0.784067		---	0.27	0.78	---	---
2,4-Dimethylphenol	0.018	0.036	0.8394	0.126011	0.252021		---	0.13	0.25	---	---
4,6-Dinitro-o-cresol	0.078	0.277	0.8394	0.546046	1.939165		---	0.55	1.94	---	---
2,4-Dinitrophenol	0.071	0.123	0.8394	0.497042	0.861073		---	0.50	0.86	---	---
2-Nitrophenol	0.041	0.069	0.8394	0.287024	0.483041		---	0.29	0.48	---	---
4-Nitrophenol	0.072	0.124	0.8394	0.504043	0.868074		---	0.50	0.87	---	---
Phenol	0.015	0.026	0.8394	0.105009	0.182015		---	0.11	0.18	---	---

Calculation of Technology Based Limits for
Out. 002 Phase 1
Calculation of Toxic Limits, OCPSF Subpart I
TABLE 4

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF Parameter	G/L Val	G/L Val	Process	G/L Val	G/L Val	Tech Old	Tech Old	Anti-Back	Out. 002	Out. 002	Out. 002	Out. 002
Subpart I	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.		Avg	Max	Avg	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day1=OldvsGL		lbs/day	lbs/day	mg/L	mg/L
							2=Old+GL					
BASE/NEUTRAL COMPOUNDS												
Acenaphthene	0.022	0.059	0.8394	0.154013	0.413035			---	0.15	0.41	---	---
Acenaphthylene	0.022	0.059	0.8394	0.154013	0.413035			---	0.15	0.41	---	---
Anthracene	0.022	0.059	0.8394	0.154013	0.413035			---	0.15	0.41	---	---
Benzo(a)anthracene	0.022	0.059	0.8394	0.154013	0.413035			---	0.15	0.41	---	---
Benzo(a)pyrene	0.023	0.061	0.8394	0.161014	0.427036			---	0.16	0.43	---	---
3,4-Benzofluoranthene	0.023	0.061	0.8394	0.161014	0.427036			---	0.16	0.43	---	---
Benzo(k)fluoranthene	0.022	0.059	0.8394	0.154013	0.413035			---	0.15	0.41	---	---
Bis(2-ethylhexyl)-phthalate	0.103	0.279	0.8394	0.721061	1.953166			---	0.72	1.95	---	---
Chrysene	0.022	0.059	0.8394	0.154013	0.413035			---	0.15	0.41	---	---
1,2-Dichlorobenzene	0.077	0.163	0.8394	0.539046	1.141097			---	0.54	1.14	---	---
1,3-Dichlorobenzene	0.031	0.044	0.8394	0.217018	0.308026			---	0.22	0.31	---	---
1,4-Dichlorobenzene	0.015	0.028	0.8394	0.105009	0.196017			---	0.11	0.20	---	---
Diethyl phthalate	0.081	0.203	0.8394	0.567048	1.421121			---	0.57	1.42	---	---
Dimethyl phthalate	0.019	0.047	0.8394	0.133011	0.329028			---	0.13	0.33	---	---
Di-n-butyl phthalate	0.027	0.057	0.8394	0.189016	0.399034			---	0.19	0.40	---	---
2,4-Dinitrotoluene	0.113	0.285	0.8394	0.791067	1.99517			---	0.79	2.00	---	---
2,6-Dinitrotoluene	0.255	0.641	0.8394	1.785152	4.487382			---	1.79	4.49	---	---
Fluoranthene	0.025	0.068	0.8394	0.175015	0.476041			---	0.18	0.48	---	---
Fluorene	0.022	0.059	0.8394	0.154013	0.413035			---	0.15	0.41	---	---
Hexachlorobenzene	0.015	0.028	0.8394	0.105009	0.196017			---	0.11	0.20	---	---
Hexachlorobutadiene	0.02	0.049	0.8394	0.140012	0.343029			---	0.14	0.34	---	---
Hexachloroethane	0.021	0.054	0.8394	0.147013	0.378032			---	0.15	0.38	---	---
Naphthalene	0.022	0.059	0.8394	0.154013	0.413035			---	0.15	0.41	---	---
Nitrobenzene	0.027	0.068	0.8394	0.189016	0.476041			---	0.19	0.48	---	---
Phenanthrene	0.022	0.059	0.8394	0.154013	0.413035			---	0.15	0.41	---	---
Pyrene	0.025	0.067	0.8394	0.175015	0.46904			---	0.18	0.47	---	---
1,2,4-Trichlorobenzene	0.068	0.14	0.8394	0.476041	0.980083			---	0.48	0.98	---	---

Revised 03/27/02 LA0007854, AI1556 Appendix A-2 Page 1

10/11/2007 Calculation of Technology Based Limits for

(*1) TABLE 1

Permittee:

Permit Number: LA0007854, AI1556

Appendix Appendix A-2

[] Flow Basis 1=proc, 0=all 0

Concentration flow, (MGD) ---

GL vs Old, 0=n, 1=y, 2=GL+Old 1

Outfall number Out. 002 Phase 2

Deepwell fract., 40 CFR 122.50

(*2)

OCPSF Subpart I=1, J=2 1

OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
Nitroparaffin Basics Production	0.531	
Nitroparaffin Derivitives & Cry	0.332	
Lab Wastewater	0.029	
Dry Weather Ditch Flow	0.0774	
TOTAL PROCESS FLOW:	0.9694	---

BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:	0.0286	

MISCELLANEOUS:	MGD	gpm
TOTAL MISCELLANEOUS FLOWS:	---	---

UTILITY WASTEWATER:	MGD	gpm
No. 3, 6, and Pilot Plant CTBD	0.05	
Hydrogen Plant Blowdown	0.002	
TOTAL UTILITY WW FLOWS:	0.052	---

TOTAL OCPSF+BPJ FLOW: 1.05 ---

(*3) Fraction of OCPSF Conc. or BPJ []

Fract =0, []=1 0

	BOD,avg	BOD,max	TSS,avg	TSS,max
Miscellaneous WW	0.5	0.5	0.5	0.5
Misc. WW, mg/L	5	10	10	20
Utility WW	0.25	0.25	0.25	0.25
Utility WW, mg/L	5	10	10	20
Sanitary, mg/L	30	45	30	45

(*4)

Metal+CN Flows:	MGD	gpm
Total Chromium	0.944	
Total Copper	0.944	
Total Lead	0.944	
Total Nickel	0.863	
Total Zinc	0.944	
Total Cyanide	0.863	

(*5)

OCPSF Guideline Subpart:	Prod. 1000 lbs per day	Prod. Fraction of Total
B, Rayon Fibers		---
C, Other Fibers		---
D,Thermoplastic Resins		---
E,Thermosetting Resins		---
F, Commodity Organics		---
G, Bulk Organics		---
H, Specialty Organics		1
Total:	---	1

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio		
TOC/BOD5 ratio		

COD,TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L		

(*7)

INORGANIC GUIDELINES:

New Source 1=y 0=n 0

O Fraction=0, []=1 0

40 CFR 415	Prod. 1000 lbs per day	Flow MGD	Flow gpm	OCPSF Fraction Avg	OCPSF Fraction Max
40 CFR 415.63 Mercury				1	1
40 CFR 415.63 Diaphragm				1	1
				1	1
				1	1

(*8)

OCPSF Alternate Flows: MGD

Conventionals:

Organic Toxics: ---

Process Waste Water

Process Stormwater

(*9) Page and Table Numbering

	1=y, 0=n
1st Input Page	1
2nd Input Page	0
OCPSF	1
SS Metals	0
Inorganic	0
Fertilizer	0
Pesticides	0
COD/TOC/O&G Tbl	0
BOD/TSS Tbl	1

Table Designation Sequence

Pesticides &OCPSF	0
PestMetal 1=y,0=n	0

Flow MGD

(*10) COD and TOC limits, precalc

COD,Avg (lbs/day)	0
COD,Max (lbs/day)	0
TOC,Avg (lbs/day)	0
TOC,Max (lbs/day)	0

Conversion Factors:

Conv mg/L-->lbs/da	8.34
Conv ug/L-->mg/L:	0.0001
Conv gpm-->MGD:	0.00144

OCPSF+Inorganic 1.05

Calculation of Technology Based Limits for

Out. 002 Phase 2

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414 Subpart:	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg mg/L	TSS Max mg/L	Prod. 1000 lbs per day	Prod. Fraction of Total	Process Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D,Thermoplastic Resins							---	8.34	---	---	---	---
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics	45	120	57	183		1	0.9694	8.34	363.8158	970.1755	460.8334	1479.518
Total/Weighted[]	45	120	57	183		1	0.9694	8.34	363.8158	970.1755	460.8334	1479.518

BPJ Sources/Guidelines BPJ Sources:	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg mg/L	TSS Max mg/L	Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
Sanitary WW:	30	45	30	45	0.0286	8.34	7.15572	10.73358	7.15572	10.73358
Miscellaneous:					---	8.34	---	---	---	---
Utility Wastewater:	11.25	30	14.25	45.75	0.052	8.34	4.8789	13.0104	6.17994	19.84086
					---	8.34	---	---	---	---
					---	8.34	---	---	---	---
					---	8.34	---	---	---	---
BPJ Source Total:					0.0806		12.03462	23.74398	13.33566	30.57444

Other Guidelines: Inorganic 40 CFR 415	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg lbs/1000	TSS Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---

	BOD5 Avg lbs/1000	BOD5 Max lbs/1000	TSS Avg lbs/1000	TSS Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction	Flow (MGD)	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
					---	---	---	---	---	---	---
					---	---		---	---	---	---
					---	---		---	---	---	---
Other Guideline Total (lbs/day)							---	---	---	---	---
BOD5/TSS Grand Total (lbs/day)							1.05	375.8504	993.9195	474.169	1510.092

Calculation of Technology Based Limits for
Out. 002 Phase 2
TABLE 3

Calculation Summary of Conventional and Non-Conventional Limits

(*1) Parameter	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 002 Avg lbs/day	(*11) Out. 002 Max lbs/day	(*12) Out. 002 Avg mg/L	(*13) Out. 002 Max mg/L
CONVENTIONAL												
BOD5 [*1]				375.8504	993.9195	310	820	1	310	820	---	---
TSS				474.169	1510.092			---	474	1510	---	---
Oil and Grease				---	---			---	---	---	---	---
NON-CONVENTIONAL												
COD				---	---			---	---	---	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---		--
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---				---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 002 Avg lbs/day	(*11) Out. 002 Max lbs/day	(*12) Out. 002 Avg mg/L	(*13) Out. 002 Max mg/L
METALS AND CYANIDE												
Total Chromium	1.11	2.77	0.944	8.738986	21.8081			---	8.74	21.81	---	---
Total Copper	1.45	3.38	0.944	11.41579	26.6106			---	11.42	26.61	---	---
Total Lead	0.32	0.69	0.944	2.519347	5.432342			---	2.52	5.43	---	---
Total Nickel	1.69	3.98	0.863	12.16364	28.64573			---	12.16	28.65	---	---
Total Zinc	1.05	2.61	0.944	8.266608	20.54843			---	8.27	20.55	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide	0.42	1.2	0.863	3.022916	8.636904			---	3.02	8.64	---	---
Amenable Cyanide				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

[*1] Limitation retained from previous permit based on the Ouichita River Basin TMDL for BOD and nutrients, issued July 1, 2002. A portion of the Margin of Safety (22 lbs.) was used because the TMDL states that no reduction is needed for this facility, however, the TMDL was based off of a value in the draft permit. The Monthly Average in final permit was 22 lbs. higher than the draft.

LA0007854, AI1556 Appendix A-2 Page 4

Calculation of Technology Based Limits for
Out. 002 Phase 2
Calculation of Toxic Limits, OCPSF Subpart I
TABLE 4

(*1) OCPSF Parameter Subpart I	(*2) G/L Val Avg. mg/L	(*3) G/L Val Max mg/L	(*4) Process Flow (MGD)	(*5) G/L Val Avg lbs/day	(*6) G/L Val Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old G/L-BPJ Max 0=no scr. 1=OldvsGL 2=Old+GL	(*9) Out. 002 Avg lbs/day	(*10) Out. 002 Max lbs/day	(*11) Out. 002 Avg mg/L	(*12) Out. 002 Max mg/L
VOLATILE COMPOUNDS											
Acrylonitrile	0.096	0.242	0.9694	0.77614	1.956521		---	0.78	1.96	---	---
Benzene	0.037	0.136	0.9694	0.299137	1.099532		---	0.30	1.10	---	---
Carbon Tetrachloride	0.018	0.038	0.9694	0.145526	0.307222		---	0.15	0.31	---	---
Chlorobenzene	0.015	0.028	0.9694	0.121272	0.226374		---	0.12	0.23	---	---
Chloroethane	0.104	0.268	0.9694	0.840819	2.166725		---	0.84	2.17	---	---
Chloroform	0.021	0.046	0.9694	0.169781	0.371901		---	0.17	0.37	---	---
1,1-Dichloroethane	0.022	0.059	0.9694	0.177866	0.477003		---	0.18	0.48	---	---
1,2-Dichloroethane	0.068	0.211	0.9694	0.549766	1.705892		---	0.55	1.71	---	---
1,1-Dichloroethylene	0.016	0.025	0.9694	0.129357	0.20212		---	0.13	0.20	---	---
1,2-trans-Dichloro-ethylene	0.021	0.054	0.9694	0.169781	0.436579		---	0.17	0.44	---	---
1,2-Dichloropropane	0.153	0.23	0.9694	1.236974	1.859503		---	1.24	1.86	---	---
1,3-Dichloropropylene	0.029	0.044	0.9694	0.234459	0.355731		--	0.23	0.36	---	---
Ethylbenzene	0.032	0.108	0.9694	0.258713	0.873158		---	0.26	0.87	---	---
Methyl Chloride	0.086	0.19	0.9694	0.695292	1.536111		---	0.70	1.54	---	---
Methylene Chloride	0.04	0.089	0.9694	0.323392	0.719547		---	0.32	0.72	---	---
Tetrachloroethylene	0.022	0.056	0.9694	0.177866	0.452749		---	0.18	0.45	---	---
Toluene	0.026	0.08	0.9694	0.210205	0.646784		---	0.21	0.65	---	---
1,1,1 Trichloroethane	0.021	0.054	0.9694	0.169781	0.436579		---	0.17	0.44	---	---
1,1,2-Trichloroethane	0.021	0.054	0.9694	0.169781	0.436579		---	0.17	0.44	---	---
Trichloroethylene	0.021	0.054	0.9694	0.169781	0.436579		---	0.17	0.44	---	---
Vinyl Chloride	0.104	0.268	0.9694	0.840819	2.166725		---	0.84	2.17	---	---
ACID COMPOUNDS											
2-Chlorophenol	0.031	0.098	0.9694	0.250629	0.79231		---	0.25	0.79	---	---
2,4-Dichlorophenol	0.039	0.112	0.9694	0.315307	0.905497		---	0.32	0.91	---	---
2,4-Dimethylphenol	0.018	0.036	0.9694	0.145526	0.291053		---	0.15	0.29	---	---
4,6-Dinitro-o-cresol	0.078	0.277	0.9694	0.630614	2.239488		---	0.63	2.24	---	---
2,4-Dinitrophenol	0.071	0.123	0.9694	0.574021	0.99443		---	0.57	0.99	---	---
2-Nitrophenol	0.041	0.069	0.9694	0.331477	0.557851		---	0.33	0.56	---	---
4-Nitrophenol	0.072	0.124	0.9694	0.582105	1.002515		---	0.58	1.00	---	---
Phenol	0.015	0.026	0.9694	0.121272	0.210205		---	0.12	0.21	---	---

Calculation of Technology Based Limits for
Out. 002 Phase 2
Calculation of Toxic Limits, OCPSF Subpart I

TABLE 4

(*1) OCPSF Parameter Subpart I	(*2) G/L Val Avg mg/L	(*3) G/L Val Max mg/L	(*4) Process Flow (MGD)	(*5) G/L Val Avg lbs/day	(*6) G/L Val Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max 0=no scr. 1=Old vs GL 2=Old+GL	(*9) Anti-Back lbs/day	(*10) Out. 002 Avg lbs/day	(*11) Out. 002 Max lbs/day	(*12) Out. 002 Avg mg/L	(*13) Out. 002 Max mg/L
BASE/NEUTRAL COMPOUNDS												
Acenaphthene	0.022	0.059	0.9694	0.177866	0.477003			---	0.18	0.48	---	---
Acenaphthylene	0.022	0.059	0.9694	0.177866	0.477003			---	0.18	0.48	---	---
Anthracene	0.022	0.059	0.9694	0.177866	0.477003			---	0.18	0.48	---	---
Benzo(a)anthracene	0.022	0.059	0.9694	0.177866	0.477003			---	0.18	0.48	---	---
Benzo(a)pyrene	0.023	0.061	0.9694	0.18595	0.493173			---	0.19	0.49	---	---
3,4-Benzofluoranthene	0.023	0.061	0.9694	0.18595	0.493173			---	0.19	0.49	---	---
Benzo(k)fluoranthene	0.022	0.059	0.9694	0.177866	0.477003			---	0.18	0.48	---	---
Bis(2-ethylhexyl)-phthalate	0.103	0.279	0.9694	0.832734	2.255658			---	0.83	2.26	---	---
Chrysene	0.022	0.059	0.9694	0.177866	0.477003			---	0.18	0.48	---	---
1,2-Dichlorobenzene	0.077	0.163	0.9694	0.622529	1.317822			---	0.62	1.32	---	---
1,3-Dichlorobenzene	0.031	0.044	0.9694	0.250629	0.355731			---	0.25	0.36	---	---
1,4-Dichlorobenzene	0.015	0.028	0.9694	0.121272	0.226374			---	0.12	0.23	---	---
Diethyl phthalate	0.081	0.203	0.9694	0.654868	1.641214			---	0.65	1.64	---	---
Dimethyl phthalate	0.019	0.047	0.9694	0.153611	0.379985			---	0.15	0.38	---	---
Di-n-butyl phthalate	0.027	0.057	0.9694	0.218289	0.460833			---	0.22	0.46	---	---
2,4-Dinitrotoluene	0.113	0.285	0.9694	0.913582	2.304167			---	0.91	2.30	---	---
2,6-Dinitrotoluene	0.255	0.641	0.9694	2.061623	5.182354			---	2.06	5.18	---	---
Fluoranthene	0.025	0.068	0.9694	0.20212	0.549766			---	0.20	0.55	---	---
Fluorene	0.022	0.059	0.9694	0.177866	0.477003			---	0.18	0.48	---	---
Hexachlorobenzene	0.015	0.028	0.9694	0.121272	0.226374			---	0.12	0.23	---	---
Hexachlorobutadiene	0.02	0.049	0.9694	0.161696	0.396155			---	0.16	0.40	---	---
Hexachloroethane	0.021	0.054	0.9694	0.169781	0.436579			---	0.17	0.44	---	---
Naphthalene	0.022	0.059	0.9694	0.177866	0.477003			---	0.18	0.48	---	---
Nitrobenzene	0.027	0.068	0.9694	0.218289	0.549766			---	0.22	0.55	---	---
Phenanthrene	0.022	0.059	0.9694	0.177866	0.477003			---	0.18	0.48	---	---
Pyrene	0.025	0.067	0.9694	0.20212	0.541681			---	0.20	0.54	---	---
1,2,4-Trichlorobenzene	0.068	0.14	0.9694	0.549766	1.131871			---	0.55	1.13	---	---

10/11/2007 Calculation of Technology Based Limits for

(*1) TABLE 1

Permittee:	
Permit Number:	LA0007854, AI1556
Appendix	Appendix A-3
[] Flow Basis 1=proc. 0=all	0
Concentration flow, (MGD)	---
GL vs Old,0=n,1=y,2=GL+Old	1
Outfall number	Out. 002 Phase 3
Deepwell fract., 40 CFR 122.50	

(*2)

OCPSF Subpart I=1, J=2	1	
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
Nitroparaffin Basics Production	0.554	
Nitroparaffin Derivitives & Cry	0.332	
Lab Wastewater	0.029	
Dry Weather Ditch Flow	0.0774	
TOTAL PROCESS FLOW:	0.9924	---
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:	0.0286	
MISCELLANEOUS:	MGD	gpm
TOTAL MISCELLANEOUS FLOWS:	---	---
UTILITY WASTEWATER:	MGD	gpm
No. 3, 6, and Pilot Plant CTBD	0.05	
Hydrogen Plant Blowdown	0.002	
TOTAL UTILITY WW FLOWS:	0.052	---
TOTAL OCPSF+BPJ FLOW:	1.073	---

(*3) Fraction of OCPSF Conc. or BPJ []

Fract =0, []=1	0	BOD,avg	BOD,max	TSS,avg	TSS,max
Miscellaneous WW		0.5	0.5	0.5	0.5
Misc. WW, mg/L		5	10	10	20
Utility WW		0.25	0.25	0.25	0.25
Utility WW, mg/L		5	10	10	20
Sanitary, mg/L		30	45	30	45

(*4)

Metal+CN Flows:	MGD	gpm
Total Chromium	0.967	
Total Copper	0.967	
Total Lead	0.967	
Total Nickel	0.886	
Total Zinc	0.967	
Total Cyanide	0.886	

(*5)

OCPSF Guideline Subpart:	Prod. 1000 lbs per day	Prod. Fraction of Total
B, Rayon Fibers		---
C, Other Fibers		---
D,Thermoplastic Resins		---
E,Thermosetting Resins		---
F, Commodity Organics		---
G, Bulk Organics		---
H, Specialty Organics		1
Total:	---	1

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio		
TOC/BOD5 ratio		
COD,TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L		

(*7)

INORGANIC GUIDELINES:					
New Source 1=y 0=n	0	Prod.			OCPSF BOD5
O Fraction=0, []=1	0	1000 lbs	Flow	Flow	OCPSF Fraction
40 CFR 415		per day	MGD	gpm	Avg Max
40 CFR 415.63 Mercury					1 1
40 CFR 415.63 Diaphragm					1 1
					1 1
					1 1

Conversion Factors:

Conv mg/L-->lbs/da	8.34
Conv ug/L-->mg/L:	0.0001
Conv gpm-->MGD:	0.00144

(*8)

OCPSF Alternate Flows:	MGD
Conventionals:	
Organic Toxics:	---
Process Waste Water	
Process Stormwater	

(*9)

Page and Table Numbering	1=y, 0=n
1st Input Page	1
2nd Input Page	0
OCPSF	1
SS Metals	0
Inorganic	0
Fertilizer	0
Pesticides	0
COD/TOC/O&G Tbl	0
BOD/TSS Tbl	1
Table Designation Sequence	
Pesticides &OCPSF	0
PestMetal 1=y,0=n	0

Flow (*10) COD and TOC limits, precalc

MGD	COD,Avg (lbs/day)	0
---	COD,Max (lbs/day)	0
---	TOC,Avg (lbs/day)	0
---	TOC,Max (lbs/day)	0

OCPSF+Inorganic 1.073

Calculation of Technology Based Limits for

Out. 002 Phase 3

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414	BOD5	BOD5	TSS	TSS	Prod.	Prod.	Process	Conv.	BOD5	BOD5	TSS	TSS
Subpart:	Avg	Max	Avg	Max	1000 lbs	Fraction	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L	per day	of Total	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D,Thermoplastic Resins							---	8.34	---	---	---	---
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics	45	120	57	183		1	0.9924	8.34	372.4477	993.1939	471.7671	1514.621
Total/Weighted[]	45	120	57	183		1	0.9924	8.34	372.4477	993.1939	471.7671	1514.621
BPJ Sources/Guidelines	BOD5	BOD5	TSS	TSS				Conv.	BOD5	BOD5	TSS	TSS
	Avg	Max	Avg	Max			Flow	Factor	Avg	Max	Avg	Max
BPJ Sources:	mg/L	mg/L	mg/L	mg/L			(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
Sanitary WW:	30	45	30	45			0.0286	8.34	7.15572	10.73358	7.15572	10.73358
Miscellaneous:							---	8.34	---	---	---	---
Utility Wastewater:	11.25	30	14.25	45.75			0.052	8.34	4.8789	13.0104	6.17994	19.84086
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BPJ Source Total:							0.0806		12.03462	23.74398	13.33566	30.57444
Other Guidelines:	BOD5	BOD5	TSS	TSS	Prod.	Flow to		Conv.	BOD5	BOD5	TSS	TSS
Inorganic	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow	Factor	Avg	Max	Avg	Max
40 CFR 415	mg/L	mg/L	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
	BOD5	BOD5	TSS	TSS	Prod.	Flow to			BOD5	BOD5	TSS	TSS
	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow		Avg	Max	Avg	Max
	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---		---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
Other Guideline Total (lbs/day)							---		---	---	---	---
BOD5/TSS Grand Total (lbs/day)							1.073		384.4823	1016.938	485.1028	1545.195

Calculation of Technology Based Limits for
Out. 002 Phase 3
TABLE 3

Calculation Summary of Conventional and Non Conventional Limits

(*1) Parameter	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-BackOut. 0=no scr. 1=OldvsGL 2=Old+GL	(*10) 002 Out. Avg lbs/day	(*11) 002 Out. Max lbs/day	(*12) 002 Out. Avg mg/L	(*13) 002 Out. Max mg/L
CONVENTIONAL												
BOD5				384.4823	1016.938	310	820	1	310	820	---	---
TSS				485.1028	1545.195			---	485	1545	---	---
Oil and Grease				---	---			---	---	---	---	---
NON-CONVENTIONAL												
COD				---	---			---	---	---	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-BackOut. 0=no scr. 1=OldvsGL 2=Old+GL	(*10) 002 Out. Avg lbs/day	(*11) 002 Out. Max lbs/day	(*12) 002 Out. Avg mg/L	(*13) 002 Out. Max mg/L
METALS AND CYANIDE												
Total Chromium	1.11	2.77	0.967	8.951906	22.33944			---	8.95	22.34	---	---
Total Copper	1.45	3.38	0.967	11.69393	27.25896			---	11.69	27.26	---	---
Total Lead	0.32	0.69	0.967	2.58073	5.564698			---	2.58	5.56	---	---
Total Nickel	1.69	3.98	0.886	12.48782	29.40918			---	12.49	29.41	---	---
Total Zinc	1.05	2.61	0.967	8.468019	21.04908			---	8.47	21.05	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide	0.42	1.2	0.886	3.103481	8.867088			---	3.10	8.87	---	---
Amenable Cyanide				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

[*1] Limitation retained from previous permit based on the Ouichita River Basin TMDL for BOD and nutrients, issued July 1, 2002. A portion of the Margin of Safety (22 lbs.) was used because the TMDL states that no reduction is needed for this facility, however, the TMDL was based off of a value in the draft permit. The Monthly Average in final permit was 22 lbs. higher than the draft.

Calculation of Technology Based Limits for
Out. 002 Phase 3
Calculation of Toxic Limits, OCPSF Subpart I
TABLE 4

(*1) OCPSF Parameter Subpart I	(*2) G/L Val Avg. mg/L	(*3) G/L Val Max mg/L	(*4) Process Flow (MGD)	(*5) G/L Val Avg lbs/day	(*6) G/L Val Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max0=no scr. lbs/day1=OldvsGL 2=Old+GL	(*9) G/L-BPJ	(*10) Out. 002 Avg lbs/day	(*11) Out. 002 Max lbs/day	(*12) Out. 002 Avg mg/L	(*13) Out. 002 Max mg/L
VOLATILE COMPOUNDS												
Acrylonitrile	0.096	0.242	0.9924	0.794555	2.002941			---	0.79	2.00	---	---
Benzene	0.037	0.136	0.9924	0.306235	1.12562			---	0.31	1.13	---	---
Carbon Tetrachloride	0.018	0.038	0.9924	0.148979	0.314511			---	0.15	0.31	---	---
Chlorobenzene	0.015	0.028	0.9924	0.124149	0.231745			---	0.12	0.23	---	---
Chloroethane	0.104	0.268	0.9924	0.860768	2.218133				0.86	2.22	---	---
Chloroform	0.021	0.046	0.9924	0.173809	0.380724			---	0.17	0.38	---	---
1,1-Dichloroethane	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	---
1,2-Dichloroethane	0.068	0.211	0.9924	0.56281	1.746366			---	0.56	1.75	---	---
1,1-Dichloroethylene	0.016	0.025	0.9924	0.132426	0.206915			---	0.13	0.21	---	---
1,2-trans-Dichloro-ethylene	0.021	0.054	0.9924	0.173809	0.446937			---	0.17	0.45	---	---
1,2-Dichloropropane	0.153	0.23	0.9924	1.266322	1.903622			---	1.27	1.90	---	---
1,3-Dichloropropylene	0.029	0.044	0.9924	0.240022	0.364171			---	0.24	0.36	---	---
Ethylbenzene	0.032	0.108	0.9924	0.264852	0.893875			---	0.26	0.89	---	---
Methyl Chloride	0.086	0.19	0.9924	0.711789	1.572557			---	0.71	1.57	---	---
Methylene Chloride	0.04	0.089	0.9924	0.331065	0.736619			---	0.33	0.74	---	---
Tetrachloroethylene	0.022	0.056	0.9924	0.182086	0.46349			---	0.18	0.46	---	---
Toluene	0.026	0.08	0.9924	0.215192	0.662129			---	0.22	0.66	---	---
1,1,1-Trichloroethane	0.021	0.054	0.9924	0.173809	0.446937			---	0.17	0.45	---	---
1,1,2-Trichloroethane	0.021	0.054	0.9924	0.173809	0.446937			---	0.17	0.45	---	---
Trichloroethylene	0.021	0.054	0.9924	0.173809	0.446937			---	0.17	0.45	---	---
Vinyl Chloride	0.104	0.268	0.9924	0.860768	2.218133			---	0.86	2.22	---	---
ACID COMPOUNDS												
2-Chlorophenol	0.031	0.098	0.9924	0.256575	0.811108			---	0.26	0.81	---	---
2,4-Dichlorophenol	0.039	0.112	0.9924	0.322788	0.926981			---	0.32	0.93	---	---
2,4-Dimethylphenol	0.018	0.036	0.9924	0.148979	0.297958			---	0.15	0.30	---	---
4,6-Dinitro-o-cresol	0.078	0.277	0.9924	0.645576	2.292623			---	0.65	2.29	---	---
2,4-Dinitrophenol	0.071	0.123	0.9924	0.58764	1.018024			---	0.59	1.02	---	---
2-Nitrophenol	0.041	0.069	0.9924	0.339341	0.571087			---	0.34	0.57	---	---
4-Nitrophenol	0.072	0.124	0.9924	0.595916	1.0263			---	0.60	1.03	---	---
Phenol	0.015	0.026	0.9924	0.124149	0.215192			---	0.12	0.22	---	---

Calculation of Technology Based Limits for
Out. 002 Phase 3
Calculation of Toxic Limits, OCPSF Subpart I
TABLE 4

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF Parameter	G/L Val	G/L Val	Process	G/L Val	G/L Val	Tech Old	Tech Old	Anti-Back	Out. 002	Out. 002	Out. 002	Out. 002
Subpart I	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.		Avg	Max	Avg	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day1=OldvsGL		lbs/day	lbs/day	mg/L	mg/L
							2=Old+GL					
BASE/NEUTRAL COMPOUNDS												
Acenaphthene	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	---
Acenaphthylene	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	---
Anthracene	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	---
Benzo(a)anthracene	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	---
Benzo(a)pyrene	0.023	0.061	0.9924	0.190362	0.504874			---	0.19	0.50	---	---
3,4-Benzofluoranthene	0.023	0.061	0.9924	0.190362	0.504874			---	0.19	0.50	---	---
Benzo(k)fluoranthene	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	---
Bis(2-ethylhexyl)-phthalate	0.103	0.279	0.9924	0.852491	2.309176			---	0.85	2.31	---	---
Chrysene	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	--
1,2-Dichlorobenzene	0.077	0.163	0.9924	0.637299	1.349088			---	0.64	1.35	---	---
1,3-Dichlorobenzene	0.031	0.044	0.9924	0.256575	0.364171			---	0.26	0.36	---	---
1,4-Dichlorobenzene	0.015	0.028	0.9924	0.124149	0.231745			---	0.12	0.23	---	---
Diethyl phthalate	0.081	0.203	0.9924	0.670406	1.680153			---	0.67	1.68	---	---
Dimethyl phthalate	0.019	0.047	0.9924	0.157256	0.389001			---	0.16	0.39	---	---
Di-n-butyl phthalate	0.027	0.057	0.9924	0.223469	0.471767			---	0.22	0.47	---	---
2,4-Dinitrotoluene	0.113	0.285	0.9924	0.935258	2.358836			---	0.94	2.36	---	---
2,6-Dinitrotoluene	0.255	0.641	0.9924	2.110537	5.305311			---	2.11	5.31	---	---
Fluoranthene	0.025	0.068	0.9924	0.206915	0.56281			---	0.21	0.56	---	---
Fluorene	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	---
Hexachlorobenzene	0.015	0.028	0.9924	0.124149	0.231745			---	0.12	0.23	---	---
Hexachlorobutadiene	0.02	0.049	0.9924	0.165532	0.405554			---	0.17	0.41	---	---
Hexachloroethane	0.021	0.054	0.9924	0.173809	0.446937			---	0.17	0.45	---	---
Naphthalene	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	---
Nitrobenzene	0.027	0.068	0.9924	0.223469	0.56281			---	0.22	0.56	---	---
Phenanthrene	0.022	0.059	0.9924	0.182086	0.48832			---	0.18	0.49	---	---
Pyrene	0.025	0.067	0.9924	0.206915	0.554533			---	0.21	0.55	---	---
1,2,4-Trichlorobenzene	0.068	0.14	0.9924	0.56281	1.158726			---	0.56	1.16	---	---

APPENDIX A-4 LA0007854, AI No. 1556

Documentation and Explanation of Technology Calculations
and Associated Lotus Spreadsheet

This is a multi-sector technology spreadsheet covering the following four guidelines: 40 CFR 414, Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF), 40 CFR 415.62 and 40 CFR 415.63, Chlor-Alkali Subcategory of Subpart F of the Inorganic Chemical Guidelines and other Inorganic Chemical Guideline subparts on a case-by-case basis, 40 CFR 418, Fertilizer Manufacturing Guidelines, Subparts B, C, D, and E / BPJ Nitrogen Sources, and 40 CFR 455, Subpart A, Pesticide Chemicals Guidelines, Organic Pesticide Chemicals Manufacturing Subcategory. Other guidelines maybe included on a case-by-case basis. Regulations at 40 CFR 144(a)/LAC 33.IX.2707 require that technology-based permit limitations be placed in permits based on effluent limitations guidelines where applicable, on Best Professional Judgement (BPJ) in the absence of guidelines or on a combination of the two. Best Available Technology Economically Achievable (BAT) guideline factors and concentrations are used for non-conventional and toxic pollutants. In the absence of BAT, Best Conventional Pollutant Control Technology (BCT) is used for non-conventional pollutants. In the absence of either BAT or BCT, Best Practicable Control Technology (BPT) is used for conventional and non-conventional pollutants. BPT is used for conventional pollutants. New Source Performance Standards (NSPS) are used as the situation dictates, however in the case of the OCPSF guidelines, NSPS=BAT. In the absence of an applicable guideline for a particular parameter, BPJ shall be utilized. The term, "monthly average" or "average", refers to the 30-day monthly average of daily maximum values, "daily maximum" or "maximum", refers to the maximum for any one day. The term, "previous permit," refers to the most recently issued NPDES or LPDES permit. The spreadsheet was programmed with the capability of addressing pollutant loadings and associated BPJ allocations for any, all, or a combination of the above mentioned guidelines at a designated outfall. If the previous permit did not give a BPJ allowance for particular wastewater, none will be granted in the reissuance in accordance with CWA 402(o), and 40 CFR 122.44.l/LAC 33.IX.2707.L. The spreadsheet is set up in a table and column/section format. Each table represents a general category for data input or calculation points. Each reference column or section is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*10). These columns or sections represent inputs, existing data sets, calculation points, or results for determining technology based limits for an effluent of concern.

Table 1

Table 1 is a data input area primarily for the OCPSF guidelines and the inorganic chemical guidelines, Sections (*2), (*3), (*4), (*5), (*6), (*7), (*8), (*10), and (*11). The Page and Table numbering sequence section, Section (*9) is used for applicable guideline(s) as well as the generalized input information in Section (*1).

(*1) General input information:

Permittee - permittee name.

Permit Number- LPDES permit number.

Appendix- Appendix designation for the header.

[] Flow Basis 1=proc, 0=all- if the flow basis for concentration limits is the same as the process flow in determining mass limits, then a "1" is placed in the designated cell. A "0" indicates the total outfall flow will be used in determining concentration based limits. See Concentration flow (MGD).

Concentration flow (MGD)- flow used for calculating concentration based limits in MGD.

GL vs Old, 0=n, 1=y, 2=GL+Old- this is the anti-backsliding (40 CFR 122.44.l, LAC 33.IX.2707.L) screening designation switch. "Old" represents the previous permit limit established by Best Professional Judgement (BPJ), which is now BAT for that facility, and "GL" represents the current guideline calculation. If the screen indicates that the previously established limitation is more stringent, but there has been an increase in production, another spreadsheet can be run giving guideline allowances for the production increase by putting a "2" in the specified cell. This cell sets a default for all anti-backsliding throughout the spreadsheet, but different options can be selected on a parameter specific basis.

Outfall number- Outfall number is placed in the designated cell, the default is "Out. 001", abbreviated due to space limitations in other portions of the spreadsheet.

Deepwell fract., 40 CFR 122.50/LAC 33:IX.2717- this applies to any situation where a discharger that falls under mass based guidelines or mass based BPJ and is discharging a portion of their wastewater to a surface water receiving stream and the remaining portion to a deepwell (most common in La.), POTW, offsite disposal, etc. The facility's mass based limitations must be reduced by the fraction of water not being discharged to the surface water receiving the discharge. Flow based guideline effluent limitations and associated BPJ will receive adjustments in their source flows.

(*2) OCPSF Flow Calculations- OCPSF flow calculations are divided into four basic categories, 1) process, 2) sanitary wastewater, 3) miscellaneous flows, and 4) utility wastewater. Additional flows may be entered as needed. Flows can either be entered as MGD or gpm units in the designated column. The process flow is used to calculate organic toxic limitations if the facility's annual production exceeds 5 million pounds per year of final product. Process flow includes flows generated by the manufacturing process, process area stormwater, and process lab water as stated in 40 CFR 414. Other flows, such as groundwater remediation wastewater, are considered as process wastewaters on a BPJ basis. Additional flows such as utility, sanitary, and miscellaneous wastewaters are used in determining additional BPJ allocations for BOD_5 and TSS limitations, but not toxics. Miscellaneous wastewater includes, but is not limited to,

wastewaters from tank farms or chemical storage areas or uncontaminated stormwater. Utility wastewater includes, but is not limited to, non-contact cooling tower blowdown, boiler blowdown, filter backwash, etc.

(*3) Fraction of OCPSF Conc. or BPJ []. Utility, Miscellaneous and other wastewaters contribute BOD_5 and TSS loadings to the process outfall if these wastewaters are discharged through the process outfall. For miscellaneous wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD_5 and TSS. For utility wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD_5 and TSS. Sanitary wastewaters shall receive BOD_5 and TSS allocations of 30 mg/L, average, and 45 mg/L, maximum, as treatment equivalent to secondary treatment (LAC 33.IX.711.D). Other wastewaters shall be approached on a case-by-case basis. Anti-backsliding concerns and/or a previous permit may preclude the usage of the weighted OCPSF concentrations described above. Different BOD_5 and TSS fractions or concentrations may be used as the situation dictates. If the previous permit contains other concentrations, they may be utilized instead of fractions of production weighted OCPSF concentrations.

(*4) Metal+CN Flow- The OCPSF guidelines specify that only a specific metal bearing wastestream shall receive allowances under the guideline (40 CFR 414.90, 414.100). However, through experience, it has been determined that there are several other potential sources of metals through out a facility other than from a catalyst in a metal bearing wastestream especially in an acidic wastestream. Examples of these sources include reaction vessels and equipment, piping, cooling towers, boilers, raw contaminants, etc. In consideration of these factors, the whole toxics process flow is utilized per BPJ in the calculation of metal limits unless anti-backsliding concerns (40 CFR 122.44.l, LAC 33.IX.2707.L) and/or a previous permit prescribe the use of a lesser flow. For situations where site-specific metal bearing flows (BPJ and OCPSF guideline) need to be calculated, the "Site-Specific Metal, Cyanide, and Total Residual Chlorine (TRC) Bearing Flows" table is used. Flow is entered in MGD or gpm under the specified column on the row(s) containing the metal(s) of concern.

(*5) OCPSF Guideline Subpart- BOD_5 and TSS mass limitations are calculated using a production weighted concentration. Organic chemical production figures in 1000/lbs day or production fractions of the total may be entered on the row(s) with the indicated subpart under the designated column. The production fraction will be used more frequently as many companies consider production information confidential. If a facility manufactures under only one subpart, then the production fraction shall be unity (1).

(*6) COD & TOC Ratios/COD, TOC, O&G []- Under the ratio section, it may be necessary to determine COD or TOC BPJ loadings based on BOD_5 limitations or loadings. The appropriate ratios are entered in the indicated cells. BPJ loadings for COD, TOC, and Oil and Grease (O&G) may also be determined

on a concentration basis. Concentrations and flows are entered in the indicated cells. The ratios/concentrations are usually based on the previously issued permit, if one exists. If this is a new permit issuance or major modification involving a new unit, then the ratios/concentrations are usually based on similarly permitted facilities.

(*7) Inorganic Effluent Guidelines (40 CFR 415)- Inorganic guideline subpart and associated production and flow are entered as indicated. Chlor-Alkali guidelines (40 CFR 415.63) are present by default since chlor-alkali operations are most frequently associated with the production of organic chemicals (chlorinated solvents, vinyl chloride monomer, etc.). New sources are indicated by placing a "1" or a "0" in the indicated cell. Q Fraction=0, []=1, indicates whether the BPJ BOD_5 allocation fraction is entered in terms of weighted OCPSF concentrations, indicated by a "0", or other concentration under the indicated columns, indicated by a "1". Production information is entered in terms of 1000 lbs per day. Flow is entered in MGD or gpm in the appropriate column. Other inorganic guideline input information is included on a case-by-case basis.

(*8) OCPSF Alternate Flows- On a case-by-case basis it may be necessary to utilize an alternate flow for the calculation of the conventional pollutants BOD_5 and TSS loadings or the calculation of the organic toxic loadings. This will most commonly occur in cases where a deepwell is being eliminated. Units are in MGD.

(*9) Page and Table numbering sequence- This section shall be used for all guideline calculations and combinations. The user can specify that the spreadsheet number the pages and tables in accordance with the guidelines/tables being used. Unused pages and tables are numbered "0". This section also controls the printing of the spreadsheet; non-numbered pages are not printed.

(*10) Precalculated COD and TOC limits- Occasionally it may be necessary to incorporate a precalculated technology-based limit for TOC or COD based on DMR's or other sources, such as a previously issued permit. These values are entered in the designated cells.

Table 2

Table 2 is a data input area for the Fertilizer/BPJ Nitrogen Sources, and Pesticide Guidelines.

(*1) Fertilizer Effluent Guidelines (40 CFR 418)- The switch, "CBOD5, 1=y, 0=n" indicates whether $CBOD_5$ shall be substituted for BOD_5. This shall be done only if the applicant can submit effective documentation for the substitution. If $CBOD_5$ is selected, all other references to BOD_5 in this documentation shall refer to $CBOD_5$, and all BOD_5 concentrations shall be multiplied by the appropriate (monthly average or daily max) $CBOD_5/BOD_5$ ratio(s) as indicated. Production in 1000 lbs/day are entered on the row(s) with the appropriate guidelines. Flow is entered optionally on the

rows with guideline production since the fertilizer guidelines are mass based. BPJ allocations for Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen are determined under "BPJ Sources:". This includes "Production Based BPJ:", "BPJ Shipping Losses (Statistically Based):", and "Flow Based BPJ Nitrogen Sources (non-guideline)".

Under "Production Based BPJ" the switch for "BPJ Truck and Car Cleaning" applies only to granulated urea (40 CFR 418.33(b). The switch for "BPJ Ship Losses (Prod. Based)" is used only if shipping losses are calculated on the basis of production. The current BPJ production based shipping loss established by EPA Region 6 is 0.05 lbs/1000 lbs, daily average, and 0.10 lbs/1000 lbs daily maximum. This was originally set for Ammonia Nitrogen under the Ammonia production subcategory, but has been expanded to the other parameters and subcategories unless otherwise indicated in the previous permit.

BPJ Shipping Losses (statistically based)- If the facility can provide empirical data for shipping losses quantities (lbs/day), the mean and standard deviation are entered under the appropriate nitrogen category, ammonia, organic, or nitrate nitrogen to calculate 95th (daily average limit) and 99th percentiles (daily maximum limit).

Flow Based BPJ Nitrogen Sources (non-guideline)- Non-fertilizer guideline BPJ loadings for Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen are determined from concentrations and flows entered in the indicated cells. If the facility has ammonia production near cooling towers, the cooling tower blowdown flow is placed on the indicated row, "BPJ CTBD Allowance".

(*2) Pesticide Guidelines, 40 CFR 455, Subpart A- This is the input area for the Organic Pesticide Chemicals Manufacturing Subcategory. The other pesticide guideline subparts were not included since they have no discharge of process wastewaters requirements. New Source and End-Of-Pipe (EOP) biological treatment indications are entered in the specified cells. The pesticide guidelines are a combination of production and flow based limitations, therefore production in 1000 lbs/day and process flow in MGD are entered in the appropriate cells. Similar to the OCPSF guidelines, specific metal and cyanide bearing wastestream flows are entered for lead and cyanide. If the organic pesticide manufacturing operation is associated with an operation that falls under the OCPSF guidelines or other guidelines that do not regulate COD, it may be necessary to determine a COD/BOD_5 ratio for non-pesticide wastewaters. These values are entered in the indicated cells. Under the last section, the appropriate pesticide name and guideline factors daily average and daily maximum are entered in the appropriate cells. TOC may be substituted for COD for manufacturers of Ametryn, Prometon, Terbutryn, Cyanazine, Atrazine, Propazine, Simazine, Terbuthylazine, Hexazinone, and Glyphosphate in accordance with 40 CFR 455.20(a). TOC/BOD_5 ratios are entered under section (*6) in Table 1.

Table 3

Site-Specific Metal, Total Residual Chlorine (TRC), and Cyanide Bearing Flow Allocation. For the metals and cyanide regulated under the OCPSF guidelines, three categories of sources are accounted for, 1) OCPSF process wastewater, 2) miscellaneous and utility wastewaters, and 3) non-OCPSF guideline wastewater. TRC allocation flows are indicated by the specific source.

(*1) Parameter/Source- Metal, Cyanide, or TRC receiving a flow allocation and the source of the flow categorized as an 1) OCPSF process wastewater, 2) miscellaneous and utility wastewater, and 3) non-OCPSF wastewater. These categories may differ as the situation dictates, i.e., TRC.

(*2) Flow, MGD- Source flow in MGD.

Table 4

Table 4 is a calculation table for the conventional pollutant loadings of BOD_5 and TSS utilizing guidelines and BPJ.

(*1) The top portion of the table lists OCPSF subparts under 40 CFR 414. The bottom portion indicated by "Other Sources/Guidelines" lists non-guideline BPJ sources, sanitary wastewater, non-process area stormwater, miscellaneous wastewaters, utility wastewaters, under "Other Sources" and other contributing guidelines under "Other Guidelines".

(*2) Average BOD_5- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.

(*3) Maximum BOD_5- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.

(*4) Average TSS- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.

(*5) Maximum TSS- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.

(*6) Production in 1000 lbs/day- These values indicate the amount of production per subpart (OCPSF, Inorganic Guidelines; commonly Chlor-Alkali, and Pesticides).

(*7) At the top of the table, Production fraction of total. These values are based on a fraction of total OCPSF production per subpart. If all OCPSF manufacturing falls under one subpart, the fraction shall be unity (1).

At the bottom of the table, Flow to Treatment Plant Fraction. Applicable to mass-based guidelines; if a portion of a process wastewater is being injected to a deepwell, POTW, or other non-surface water source, this represents the remaining fraction being discharged to the receiving water.

(*8) Flow- For the OCPSF guideline portion of the table (the upper portion), this is the process flow calculated in Table 1. Under "BPJ Sources/Guidelines", these are the other categorical BPJ flows calculated in Table 1. Under the "Other Guideline" section, this is the flow associated with the production under that guideline part or subpart. Flows associated with mass-based guidelines are not used in calculations.

(*9) Conversion factor- used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.

(*10) BOD_5, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*2) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD_5 loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (*2) is multiplied by the production value in (*6), and the flow to treatment plant fraction in column (*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. Inorganic wastewaters receive a BOD_5 allocation provided that anti-backsliding does not apply. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average BOD_5.

(*11) BOD_5, Maximum, lbs/day- Similar to column (*10). See column (*10).

(*12) TSS, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*4) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD_5 loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (*4) is multiplied by the production value in (*6), and the flow to treatment plant fraction in column (*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings

including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average TSS.

(*13) TSS, Maximum, lbs/day- Similar to column (*12). See column (*12).

Table 5

Table 5 is a calculation table for the guideline and BPJ pollutant loadings of COD, TOC, and Oil and Grease.

(*1) Lists applicable guideline subparts, and sources that contribute COD, TOC, and Oil and Grease loading.

(*2) Average COD or O&G guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), COD to BOD_5 ratio, and Average O&G BPJ concentration (mg/L). COD to BOD_5 ratios or concentrations are calculated in the following order of precedence: 1) from the previously issued NPDES permit with BOD_5 and COD, 2) from the previously issued Louisiana Water Discharge Permit System (LWDPS) permit with BOD_5 and COD, 3) from the application. BPJ Oil and Grease concentration(s) are calculated utilizing the principles of mass balance, flow, and mass loadings from the previously issued NPDES permit.

(*3) Maximum COD or O&G guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), COD to BOD_5 ratio, and Maximum O&G BPJ concentration (mg/L). See discussion for column (*2).

(*4) Average TOC guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), and TOC to BOD_5 ratio. TOC to BOD_5 ratios and TOC concentrations are calculated in the following order of precedence: 1) from the previously issued NPDES permit with BOD_5 and TOC, 2) from the previously issued Louisiana Water Discharge Permit System (LWDPS) permit with BOD_5 and TOC, 3) from the application.

(*5) Maximum TOC guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), or TOC to BOD_5 ratio. See discussion for column (*4).

(*6) Production in 1000 lbs/day/BOD_5 limit, Average- Indicates amount of production per guideline subpart. Under the ratio section, BOD_5 limit, Average, this is a previously calculated average BOD_5 limit.

(*7) Flow to Treatment Plant Fraction/COD Flow, MGD/BOD_5 limit, Maximum/O&G Flow, MGD- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit

calculation. Under the BPJ Source(s) or Flow based Guidelines section, COD Flow, MGD, is entered in the indicated cell. Under the ratio section, BOD_5 limit, Maximum, this is a previously calculated maximum BOD limit. Under the BPJ Source(s) Oil and Grease (O&G) section, O&G Flow, MGD, is entered in the indicated cell.

(*8) TOC Flow, MGD - Under the BPJ Source(s) or Flow based Guidelines section, TOC Flow, MGD is entered in the indicated cell.

(*9) Conversion factor used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.

(*10) Average COD or O&G loading per source indicated on the specified row in lbs/day. Under the mass-based guideline section, this is calculated by multiplying the process factor in column (*2) by the daily production value in column (*6), and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means. Under BPJ Sources or Flow based Guidelines or the BPJ Source(s) Oil and Grease (O&G) sections, loadings are determined by multiplying the concentration specified in column (*2) by the flow in column (*7) and the conversion factor in column (*9). Total COD limits applicable to the permitted outfall are found on the row labeled, "COD/TOC Total (lbs/day)". Total Oil and Grease loadings are specified on the row labeled, "O&G Total (lbs/day)".

(*11) Maximum COD or O&G loading. Similar to column (*10). See description for column (*10).

(*12) Average TOC loading. Similar to column (*10). See description for column (*10).

(*13) Maximum TOC loading. Similar to column (*10). See description for column (*10).

Table 6

Table 6 includes calculations for the heavy metals, Total Chromium, Total Copper, Total Lead, Total Nickel, Total Zinc, Total Cyanide, Total Mercury, Total Residual Chlorine (TRC), and Amenable Cyanide utilizing BAT, NSPS, or BPJ as indicated.

(*1) Subcategory and/or Source- This specifies the applicable guideline subpart, subcategory, or BPJ source. When site-specific OCPSF metal limits are being calculated, the categorical source will be displayed: process wastewater, miscellaneous and utility wastewater, and non-ocpsf wastewater.

(*2) Average (parameter) guideline factor (lbs/1000 lbs daily production), or BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or

TRC. BPJ concentrations for TRC are usually 0.9 mg/L, average, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.

(*3) Maximum (parameter) guideline factor (lbs/1000 lbs daily production), BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 1.5 mg/L, maximum, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.

(*4) Same as (*2).

(*5) Same as (*3).

(*6) Production in 1000 lbs/day- Applicable to mass based effluent guidelines, these values indicate the amount of production in 1000 lbs/day.

(*7) Flow to Treatment Plant Fraction- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the remaining fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation.

(*8) Parameter flow in MGD- This flow is associated with the parameter specified in columns (*2) and (*3) and is used in determining flow based loadings.

(*9) Parameter flow in MGD- This flow is associated with the parameter specified in columns (*4) and (*5) and is used in determining flow based loadings.

(*10) Average guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (*2) times the flow specified in column (*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (*2) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.

(*11) Maximum guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (*3) times the flow specified in column (*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (*3) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.

(*12) Similar to column (*10). See description for (*10).

(*13) Similar to column (*11). See description for (*11).

Table 7

Table 7 calculates effluent limitations for parameters under the Fertilizer Effluent Guidelines (40 CFR 418, Subparts B, C, D, and E) utilizing BAT or NSPS as indicated. In the absence of applicable guidelines, BPJ loadings may be calculated. The non-conventional parameters are Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen.

(*1) Subcategory or Nitrogen Source:- This specifies the guideline subcategory or source. The listed processes are from 40 CFR 418 Subparts, B, C, D, and E, BAT and NSPS. BPJ allocations for Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen are determined under "BPJ Non-GL Sources:". This includes "BPJ Production Based:", "BPJ Stat. Based:" (BPJ Statistically Based), and "BPJ Flow Based".

(*2) Average subcategory guideline process factors for the specified parameter, Ammonia Nitrogen or Nitrate Nitrogen as indicated. Guideline process factors are in terms of lbs of parameter per 1000 lbs of daily production. These are located beneath the label, "Avg lbs/1000". Under "BPJ Non-GL Sources", the allowance is specified in units dependent on category. Units: Production based BPJ uses lbs/1000 lbs of product produced, statistically based BPJ utilizes the mean production in lbs/day of product, and flow based BPJ uses mg/L. A common flow based BPJ ammonia allocation, cooling tower blowdown, typically receives a 20 mg/L average allocation for Ammonia Nitrogen based on similarly permitted facilities. Anti-backsliding or poor documentation in the previously issued permit may preclude the usage of the above mentioned BPJ allocations.

(*3) Maximum subcategory guideline process factors for the specified parameter, Ammonia Nitrogen or Nitrate Nitrogen as indicated. Guideline process factors are in terms of lbs of parameter per 1000 lbs of daily production. These are located beneath the label, "Max lbs/1000". Under "BPJ Non-GL Sources", the allowance is specified in units dependent on category. Units: Production based BPJ uses lbs/1000 lbs of product produced, statistically based BPJ utilizes the standard deviation of production in lbs/day of product, and flow based BPJ uses mg/L. A common flow based BPJ ammonia allocation, cooling tower blowdown, typically receives a 50 mg/L maximum allocation for Ammonia Nitrogen based on similarly permitted facilities. Anti-backsliding or poor documentation in the previously issued permit may preclude the usage of the above mentioned BPJ allocations.

(*4) Average subcategory guideline process factor. Same as (*2), except the parameter is Organic Nitrogen.

(*5) Maximum subcategory guideline process factor. Same as (*3), except the parameter specified is Organic Nitrogen.

(*6) Daily production in 1000/lbs per day- This is applicable to Fertilizer Guideline subparts, production based shipping loss allowances, and truck and car cleaning allowances for granulated urea.

(*7) Flow to Treatment Plant Fraction/Ammonia/Nitrate Flow, MGD- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the remaining fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation. Under BPJ Flow Based:, the BPJ Ammonia Nitrogen or Nitrate Nitrogen (as appropriate) flow is entered in MGD.

(*8) Organic Nitrogen Flow, MGD- Under BPJ Flow Based:, the BPJ Organic Nitrogen flow is entered in MGD.

(*9) Average guideline subcategory/subpart or BPJ source quantity allowance in lbs/day for specified parameter. For the fertilizer guideline subcategories the process factor in column (*2) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means. Under "BPJ Production Based", calculations are similar to the guideline calculations. Under "BPJ Stat. Based", the daily average statistical shipping losses are calculated using the following formula:

Variables:

Mean: specified in column (*2)
Standard Deviation (std. dev.): specified in column (*3)
Z(95th) = 1.65

Formula:

Average = (Mean + Z(95th) * std. dev.)

Statistical and production based shipping losses will not be calculated concurrently.

Non-guideline, BPJ Ammonia and Nitrate Nitrogen flow based loadings are calculated under the row labeled "BPJ Flow Based:". The BPJ concentration in column (*2) is multiplied by the flow in column (*7) and the density correction factor of 8.34 yielding an average ammonia nitrogen loading in column (*9). Based on similarly permitted facilities, 20 mg/L of Ammonia Nitrogen is typically allocated for cooling tower blowdown in areas near ammonia production. Anti-backsliding or limits placed in a previous permit may preclude the usage of this BPJ allocation or require a different allocation.

Totalized values are indicated on the rows labeled, "Process Total", "BPJ Source Total", and "Grand Total". The value indicated on the row labeled "Grand Total" is the average limit for the parameter specified.

(*10) Maximum guideline subcategory/subpart or BPJ source quantity allowance in lbs/day for specified parameter. For the fertilizer guideline subcategories the process factor in column (*3) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means. Under "BPJ Production Based", calculations are similar to the guideline calculations. Under "BPJ Stat. Based", the daily maximum statistical shipping losses are calculated using the following formula:

Variables:

Mean: specified in column (*4)
Standard Deviation (std. dev.): specified in column (*5)
Z(99th) = 2.33

Formula:

Maximum = (Mean + Z(99th) * std. dev.)

Non-guideline, BPJ Ammonia and Nitrate Nitrogen flow based loadings are calculated under the row labeled "BPJ Flow Based:". The BPJ concentration in column (*3) is multiplied by the flow in column (*7) and the density correction factor of 8.34 yielding a maximum ammonia or nitrate nitrogen loading in column (*10). Based on similarly permitted facilities, 50 mg/L of Ammonia Nitrogen is typically allocated for cooling tower blowdown in areas near ammonia production. Anti-backsliding or limits placed in a previous permit may preclude the usage of this BPJ allocation or require a different allocation.

Similar to column (*9), statistical and production based shipping losses will not be calculated concurrently. Totalized values are indicated on the rows labeled, "Process Total", "BPJ Source Total", and "Grand Total". The value indicated on the row labeled "Grand Total" is the maximum limit for the parameter specified.

(*11) Average guideline subcategory/subpart or source quantity allowance in lbs/day for Organic Nitrogen. Similar to column (*9). See description for column (*9).

(*12) Maximum guideline subcategory/subpart or source quantity allowance in lbs/day for Organic Nitrogen. Similar to Column (*10). See description for column (*10).

Table 8

Table 8 is a calculation summary table for Conventional, Non-Conventional, and Toxic limits. If there is one consolidated OCPSF metal bearing waste stream per metal and this is the only metal source, then the guideline concentrations in columns (*2) (Daily Average) and (*3) (Daily Maximum) are multiplied times the flow in column (*4) times the conversion factor of 8.34 to yield daily average and daily maximum guideline loadings in lbs/day in columns (*5) and (*6), respectively.

(*1) Parameter- The parameters are organized into three groups, Conventional, Non-Conventional, and Metals and Cyanide.

(*2) Average guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.

(*3) Maximum guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.

(*4) Process flow in MGD- Similar to columns (*2) and (*3), this column will be left blank unless there is one consolidated metal/cyanide bearing waste stream.

(*5) Average Guideline/BPJ effluent limitation in lbs/day. Except for the metal/cyanide situation discussed in column (*2), these values are calculated in other tables and summarized in this column.

(*6) Maximum Guideline/BPJ effluent limitation in lbs/day. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.1, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Technology is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding

technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 9

Table 9 calculates the organic toxic technology effluent limitations based on BAT/NSPS established in the OCPSF guidelines, Subpart I or J as indicated. The column designations are very similar to those used for the summary table for Conventional pollutants, Non-Conventional pollutants, and Metals and Cyanide.

(*1) Parameter. The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds.

(*2) Average guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*3) Maximum guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*4) OCPSF process flow in MGD.

(*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Technology is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Daily Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Daily Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified

concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 10

Table 10 calculates the organic toxic technology effluent limitations based on BAT or NSPS (as indicated) established in the Pesticide Chemicals Guidelines, Subpart A, Table 4 (point sources that use end-of-pipe biological treatment) or Subpart B, Table 5 (point sources that do not use end-of-pipe biological treatment).

(*1) Parameter- The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds.

(*2) Average guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*3) Maximum guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*4) Pesticide process flow in MGD.

(*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated

guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Daily Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 11

Table 11 calculates limitations for pesticide parameters specified in 40 CFR 455, Subpart A, Table 2 (BAT), or Table 3 (NSPS). BPT limitations for organic pesticide chemicals from 40 CFR 455.22 may also be included in this table.

(*1) Pesticide Parameter 455, Subpart A, Table 2- A pesticide from guideline Table 2 or 3 (as indicated) will be listed. Organic Pesticide Chemicals may be listed under this section as well.

(*2) Average guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*3) Maximum guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*4) Adjusted Production in 1000 lbs per day. The average daily production value is adjusted for the fraction of flow to the treatment plant and surface waters if a portion of the wastewater is being discharged to a deepwell or other non-surface water source. If there is no deepwell, then this number represents the full production value.

(*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*2) times the adjusted production in column (*4).

(*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*3) times the adjusted production in column (*4).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.1, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Daily Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 12

Table 12 combines the organic toxics guideline calculations for 40 CFR 414, OCPSF Guidelines, Subparts I and J, and 40 CFR 455, Pesticide Chemicals Guidelines, Subpart A, Tables 4 and 5. This table is used when a facility's outfall is regulated under both the OCPSF and Pesticide Guidelines.

(*1) Parameter- The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds. The parameters listed cover the toxics listed in the OCPSF and Pesticide Guidelines.

OCPSF toxics calculation section:

(*2) Average OCPSF guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*3) Maximum OCPSF guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*4) OCPSF process flow in MGD. If a parameter is regulated by the OCPSF guidelines, but not the pesticide guidelines, and evidence suggests that the pesticide process may be contributing to the loading of that parameter, then the pesticide process flow may be added to the OCPSF flow per BPJ for that particular parameter.

(*5) Average OCPSF guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*6) Maximum OCPSF guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

Pesticide toxics calculation section:

(*7) Average Pesticide guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*8) Maximum Pesticide guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*9) Pesticide process flow in MGD. If a parameter is regulated by the pesticide guidelines, but not the OCPSF guidelines, and evidence suggests

that the OCPSF process may be contributing to the loading of that parameter, then the OCPSF process flow may be added to the pesticide flow per BPJ for that particular parameter.

(*10) Average Pesticide guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*11) Maximum Pesticide guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

(*12) Average guideline total in lbs/day- Summary column for the toxics averages calculated under the OCPSF guidelines and the pesticide guidelines. Column (*5) is summed with column (*10).

(*13) Maximum guideline total in lbs/day- Summary column for the toxics maximums calculated under the OCPSF guidelines and the pesticide guidelines. Column (*6) is summed with column (*11).

Table 13

Table 13 calculates limitations for pesticide parameters specified in 40 CFR 455, Subpart A, Table 2 (BAT), or Table 3 (NSPS) as indicated. BPT limitations for organic pesticide chemicals from 40 CFR 455.22 may also be included in this table.

(*1) Pesticide Parameter 455, Subpart A, Table 2- A pesticide from Table 2 or 3 (as indicated) will be listed. Organic Pesticide Chemicals may be listed under this section as well.

(*2) Average guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*3) Maximum guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*4) Production in 1000 lbs per day- Average daily production value in 1000 lbs/day.

(*5) Flow to Treatment Plant Fraction- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation.

(*6) Average guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*2) times the production in column (*4) times the fraction in column (*5), if applicable.

(*7) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*3) times the production in column (*4) times the fraction in column (*5), if applicable.

Table 14

Table 14 is an Anti-Backsliding calculation table for organic and pesticide toxic limitations when a facility's outfall is regulated under both OCPSF and Pesticide Guidelines for a permitted outfall. Permitted loadings and concentrations are also summarized on this table.

(*1) Parameter- Parameter name

(*2) Average Tech Calc limit in lbs/day- Outfall guideline/BPJ loading in lbs/day.

(*3) Maximum Tech Calc limit in lbs/day- Outfall guideline/BPJ loading in lbs/day.

(*4) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits), before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*5) Maximum Tech Old in lbs/day- Similar to (*4).

(*6) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*7) and (*8). If the screen indicates that the previously issued permit limit utilizing BPJ is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*2) and (*3) are subsequently added to the values in columns (*4) and (*5) yielding technology-based effluent limitations in columns (*7) and (*8). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*7) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*2). When anti-backsliding screening is used, see discussion for column (*6).

(*8) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*3). When anti-backsliding screening is used, see discussion for column (*6).

(*9) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*7). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*10) Daily Maximum technology based effluent limit in mg/L- Similar to column (*9), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*8). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Appendix B

wqsmodn.wk4 Date: 10/11 Appendix B-1 Page 1
Developer: Bruce Fielding Time: 12:16 PM
Software: Lotus 4.0 LA0007854, AI1556
Revision date: 09/07/06

Water Quality Screen for

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Ouachita River
Critical flow (Qr) cfs=	764
Harm. mean/avg tidal cfs=	3757
Drinking Water=1 HHNPCR=2	1
Marine, 1-y, 0-n	
Rec. Water Hardness=	38.5
Rec. Water TSS=	6
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	
Permit Number=	LA0007854, AI1556
Facility flow (Qef),MGD=	0.92
Outfall Number =	002 Phase 1
Eff. data, 2=lbs/day	2
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	1
Aquatic,acute only1=y,0=n	
Page Numbering/Labeling	
Appendix	Appendix B-1
Page Numbers 1=y, 0=n	1
Input Page # 1-y, 0-n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.033333
MZ Fs =	0.333333
Critical Qr (MGD)=	493.7732
Harm. Mean (MGD)=	2428.149
ZID Dilution =	0.052937
MZ Dilution =	0.005559
HHnc Dilution=	0.00186
HHc Dilution=	0.000379
ZID Upstream =	17.89033
MZ Upstream =	178.9033
MZhhnc Upstream=	536.71
MZhhc Upstream=	2639.293
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.007673
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	6.37176
lbs/day-->ug/L Qeo	130.3305
lbs/day-->ug/L Qef	130.3305
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.055585
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	7.411%
Dilution No. 2	5.5585%
Dilution No. 3	4.1689%
Dilution No. 4	3.1267%
Dilution No. 5	2.3450%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	1.77865
Total Cadmium	4.16884
Chromium III	4.80899
Chromium VI	1
Total Copper	2.657115
Total Lead	5.006713
Total Mercury	3.256612
Total Nickel	2.058769
Total Zinc	3.139712

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	11.29486	0.50869
Chromium III	251.1062	81.45626
Chromium VI	15.712	10.582
Copper	7.49644	5.433945
Lead	22.52913	0.877928
Mercury	1.734	0.012
Nickel	631.2203	70.10207
Zinc	50.97611	46.54892

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

LA0007854, AI1556

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) 1=No 95% 0=95 %	(*7) Effluent 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHDW ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)		0.16		5	0	0.3408	700	350	5	
3-Chlorophenol				10					0.1	
4-Chlorophenol				10			383	192	0.1	
2,3-Dichlorophenol				10					0.04	
2,5-Dichlorophenol				10					0.5	
2,6-Dichlorophenol				10					0.2	
3,4-Dichlorophenol				10					0.3	
2,4-Dichlorophenocy-acetic acid (2,4-D)				---					100	
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---					10	
METALS AND CYANIDE										
Total Arsenic		0.12972		10	0	0.276304	604.3851	266.7974	88.93248	
Total Cadmium				1			47.08647	2.120646	41.6884	
Chromium III		7.535524	18.80487	10	1		1207.567	391.7224	240.4495	
Chromium VI		7.535524	18.80487	10	1		15.712	10.582	50	C
Total Copper		9.843702	22.94601	10	1		19.9189	14.43862	2657.115	
Total Lead		2.172403	4.684244	5	1		112.7969	4.395532	250.3357	
Total Mercury[*1]		0.04	0.09	0.2	1		5.646965	0.039079	6.513223	
Total Nickel		10.33	24.33	40	1		1299.537	144.324		
Total Zinc		7.128198	17.71866	20	1		160.0503	146.1502	15698.56	
Total Cyanide		2.57	7.34	20	1		45.9	5.4	663.8	
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						7.1E-007	C
VOLATILE COMPOUNDS										
Benzene		0.259022	0.952081	10	1		2249	1125	1.1	C
Bromoform				10			2930	1465	3.9	C
Bromodichloromethane				10					0.2	C
Carbon Tetrachloride		0.126011	0.266023	10	1		2730	1365	0.22	C
Chloroform		0.147013	0.322027	10	1		2890	1445	5.3	C
Dibromochloromethane				10					0.39	C
1,2-Dichloroethane		0.476041	1.477126	10	1		11800	5900	0.36	C
1,1-Dichloroethylene		0.11201	0.175015	10	1		1160	580	0.05	C
1,3-Dichloropropylene		0.203017	0.308026	10	1		606	303	9.86	
Ethylbenzene		0.224019	0.756064	10	1		3200	1600	2390	
Methyl Chloride		0.602051	1.330113	50	1		55000	27500		
Methylene Chloride		0.280024	0.623053	20	1		19300	9650	4.4	C
1,1,2,2-Tetrachloro-ethane				10			932	466	0.16	C

LA0007854, AI1556

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHDW	(*18) Limiting A.C.HH	(*19) WQBL Avg 002	(*20) WQBL Max 002	(*21) WQBL Avg 002	(*22) WQBL Need MaxWQBL? 002	(*23) Phase
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	13223.23	62966.17	2688.55	4231.435	33372.07	2688.55	2688.55	2688.55	6398.749	20.62871	49.09632	no
3-Chlorophenol	---	---	53.771	---	---	53.771	53.771	53.771	127.975	0.412574	0.981926	no
4-Chlorophenol	7234.998	34541.44	53.771	2315.199	18306.96	53.771	53.771	53.771	127.975	0.412574	0.981926	no
2,3-Dichlorophenol	---	---	21.5084	---	---	21.5084	21.5084	21.5084	51.18999	0.16503	0.392771	no
2,5-Dichlorophenol	---	---	268.855	---	---	268.855	268.855	268.855	639.8749	2.062871	4.909632	no
2,6-Dichlorophenol	---	---	107.542	---	---	107.542	107.542	107.542	255.95	0.825148	1.963853	no
3,4-Dichlorophenol	---	---	161.313	---	---	161.313	161.313	161.313	383.9249	1.237722	2.945779	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	53771	---	---	53771	53771	53771	127975	412.5741	981.9264	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	5377.1	---	---	5377.1	5377.1	5377.1	12797.5	41.25741	98.19264	no
METALS AND CYANIDE												
Total Arsenic	11417.04	47997.75	47819.88	3653.452	25438.81	47819.88	3653.452	4786.022	11362.23	36.72219	87.18016	no
Total Cadmium	889.4791	381.5112	22416.27	284.6333	202.2009	22416.27	202.2009	264.8832	628.8449	2.032396	4.825001	no
Chromium III	22811.35	70472.16	129292.1	7299.632	37350.24	129292.1	7299.632	9562.518	22701.86	73.37129	174.1868	no
Chromium VI	296.8049	1903.737	132014.6	94.97757	1008.981	132014.6	94.97757	124.4206	295.3803	0.954655	2.266394	yes
Total Copper	376.2747	2597.556	1428757	120.4079	1376.704	1428757	120.4079	157.7344	374.4686	1.210264	2.873223	yes
Total Lead	2130.771	790.7709	134608	681.8466	419.1086	134608	419.1086	549.0322	1303.428	4.212615	10.00094	no
Total Mercury(*1)	106.673	7.030503	3502.225	34.13537	3.726167	3502.225	3.726167	4.881279	11.58838	0.037453	0.088915	yes
Total Nickel	24548.68	25964.36	---	7855.577	13761.11	---	7855.577	10290.81	24430.85	78.9593	187.453	no
Total Zinc	3023.404	26292.91	8441274	967.4893	13935.24	8441274	967.4893	1267.411	3008.892	9.724591	23.08662	no
Total Cyanide	867.0663	971.478	356931.9	277.4612	514.8833	356931.9	277.4612	363.4742	862.9044	2.788865	6.620893	yes
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.001875	---	---	0.001875	0.001875	0.001875	0.004462	0.000014	0.000034	no
VOLATILE COMPOUNDS												
Benzene	42484.36	202391.3	2904.322	13595	107267.4	2904.322	2904.322	2904.322	6912.286	22.28428	53.03659	no
Bromoform	55348.68	263558.4	10297.14	17711.58	139685.9	10297.14	10297.14	10297.14	24507.19	79.0079	188.0388	no
Bromodichloromethane	---	---	528.0585	---	---	528.0585	528.0585	528.0585	1256.779	4.051687	9.643016	no
Carbon Tetrachloride	51570.61	245568.1	580.8644	16502.6	130151.1	580.8644	580.8644	580.8644	1382.457	4.456856	10.60732	no
Chloroform	54593.06	259960.3	13993.55	17469.78	137779	13993.55	13993.55	13993.55	33304.65	107.3697	255.5399	no
Dibromochloromethane	---	---	1029.714	---	---	1029.714	1029.714	1029.714	2450.719	7.90079	18.80388	no
1,2-Dichloroethane	222905.9	1061430	950.5053	71329.9	562557.7	950.5053	950.5053	950.5053	2262.203	7.293037	17.35743	no
1,1-Dichloroethylene	21912.79	104343.9	132.0146	7012.092	55302.28	132.0146	132.0146	132.0146	314.1948	1.012922	2.410754	no
1,3-Dichloropropylene	11447.54	54510.71	5301.821	3663.213	28890.68	5301.821	3663.213	4798.81	11392.59	36.82031	87.41309	no
Ethylbenzene	60449.07	287845.3	1285127	19343.7	152558	1285127	19343.7	25340.25	60158.91	194.4307	461.5873	no
Methyl Chloride	1038968	4947342	---	332469.9	2622091	---	332469.9	435535.5	1033981	3341.777	7933.532	no
Methylene Chloride	364583.4	1736067	11617.29	116666.7	920115.6	11617.29	11617.29	11617.29	27649.14	89.13712	212.1463	no
1,1,2,2 Tetrachloro-ethane	17605.79	83834.95	422.4468	5633.853	44432.53	422.4468	422.4468	422.4468	1005.423	3.24135	7.714413	no

LA0007854, AI1556

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) Effluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 95th % 1=No 95% 0=95 %	(*7) estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		0.154013	0.392033	10	1		1290	645	0.65	C
Toluene		0.182015	0.560048	10	1		1270	635	6100	
1,1,1-Trichloroethane		0.147013	0.378032	10	1		5280	2640	200	
1,1,2-Trichloroethane		0.147013	0.378032	10	1		1800	900	0.56	C
Trichloroethylene		0.147013	0.378032	10	1		3900	1950	2.8	C
Vinyl Chloride		0.728062	1.87616	10	1				1.9	C
ACID COMPOUNDS										
2-Chlorophenol		0.217018	0.686058	10	1		258	129	0.1	
2,4 Dichlorophenol		0.273023	0.784067	10	1		202	101	0.3	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250	125	0.00008	C
Hexachlorobenzene		0.105009	0.196017	10	1				0.00025	C
Hexachlorabutadiene		0.140012	0.343029	10	1		5.1	1.02	0.09	C
PESTICIDES										
Aldrin				0.05			3		0.00004	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.05			5.3	0.21	0.11	C
Chlordane				0.2			2.4	0.0043	0.00019	C
4,4'-DDT				0.1			1.1	0.001	0.00019	C
4,4'-DDE				0.1			52.5	10.5	0.00019	C
4,4'-DDD				0.1			0.03	0.006	0.00027	C
Dieldrin				0.1			0.2374	0.0557	0.00005	C
Endosulfan				0.1			0.22	0.056	0.47	
Endrin				0.1			0.0864	0.0375	0.26	
Heptachlor				0.05			0.52	0.0038	0.00007	C
Toxaphene				5			0.73	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19	11		
Ammonia								4000		
Chlorides										
Sulfates										
TDS										

[*1] Limitation retained from the previous permit based on the requirements of the June 13, 2002 Mercury in Fish Tissue TMDL.

(*1) Toxic Parameters	(*12) WLAa Acute ug/L	(*13) WLAc Chronic ug/L	(*14) WLAh HHDW ug/L	(*15) LTAa Acute ug/L	(*16) LTAc Chronic ug/L	(*17) LTAh HHDW ug/L	(*18) Limiting A,C,HH ug/L	(*19) WQBL Avg 002 ug/L	(*20) WQBL Max 002 ug/L	(*21) WQBL Avg 002 lbs/day	(*22) WQBL MaxWQBL? 002 lbs/day	(*23) Need Phase
Tetrachloroethylene	24368.53	116037.7	1716.19	7797.93	61499.95	1716.19	1716.19	1716.19	4084.532	13.16798	31.3398	no
Toluene	23990.72	114238.6	3280031	7677.031	60546.47	3280031	7677.031	10056.91	23875.57	77.16467	183.1925	no
1,1,1-Trichloroethane	99740.96	474944.8	107542	31917.11	251720.7	107542	31917.11	41811.41	99262.2	320.8106	761.619	no
1,1,2-Trichloroethane	34002.6	161913	1478.564	10880.83	85813.89	1478.564	1478.564	1478.564	3518.982	11.34472	27.00044	no
Trichloroethylene	73672.3	350811.5	7392.819	23575.14	185930.1	7392.819	7392.819	7392.819	17594.91	56.72362	135.0022	no
Vinyl Chloride	---	---	5016.556	---	---	5016.556	5016.556	5016.556	11939.4	38.49103	91.60865	no
ACID COMPOUNDS												
2-Chlorophenol	4873.706	23207.53	53.771	1559.586	12299.99	53.771	53.771	53.771	127.975	0.412574	0.981926	no
2,4-Dichlorophenol	3815.647	18170.24	161.313	1221.071	9630.225	161.313	161.313	161.313	383.9249	1.237722	2.945779	no
BASE NEUTRAL COMPOUNDS												
Benzidine	4722.583	22487.92	0.211223	1511.227	11918.6	0.211223	0.211223	0.211223	0.502712	0.001621	0.003857	no
Hexachlorobenzene	---	---	0.660073	---	---	0.660073	0.660073	0.660073	1.570974	0.005065	0.012054	yes
Hexachlorabutadiene	96.3407	183.5014	237.6263	30.82902	97.25574	237.6263	30.82902	40.38602	95.87826	0.309874	0.735655	no
PESTICIDES												
Aldrin	56.671	---	0.105612	18.13472	---	0.105612	0.105612	0.105612	0.251356	0.00081	0.001929	no
Hexachlorocyclohexane (gamma BHC, Lindane)	100.1188	37.7797	290.4322	32.03801	20.02324	290.4322	20.02324	26.23045	62.27228	0.201261	0.477803	no
Chlordane	45.3368	0.773584	0.501656	14.50778	0.41	0.501656	0.41	0.5371	1.275099	0.004121	0.009784	no
4,4'-DDT	20.77937	0.179903	0.501656	6.649397	0.095349	0.501656	0.095349	0.124907	0.296535	0.000958	0.002275	no
4,4'-DDE	991.7425	1888.985	0.501656	317.3576	1001.162	0.501656	0.501656	0.501656	1.19394	0.003849	0.009161	no
4,4'-DDD	0.56671	1.07942	0.712879	0.181347	0.572093	0.712879	0.181347	0.237565	0.56399	0.001823	0.004327	no
Dieldrin	4.484565	10.02062	0.132015	1.435061	5.310926	0.132015	0.132015	0.132015	0.314195	0.001013	0.002411	no
Endosulfan	4.155873	10.07459	252.7237	1.329879	5.339531	252.7237	1.329879	1.742142	4.135925	0.013367	0.031734	no
Endrin	1.632125	6.746375	139.8046	0.52228	3.575579	139.8046	0.52228	0.684187	1.624291	0.00525	0.012463	no
Heptachlor	9.822973	0.683633	0.18482	3.143351	0.362325	0.18482	0.18482	0.18482	0.439873	0.001418	0.003375	no
Toxaphene	13.78994	0.035981	0.63367	4.412782	0.01907	0.63367	0.01907	0.024981	0.059307	0.000192	0.000455	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	358.9163	1978.937	---	114.8532	1048.836	---	114.8532	150.4577	357.1935	1.154432	2.740675	no
Ammonia	---	719613.3	---	---	381395.1	---	381395.1	499627.5	1186139	3833.542	9101.005	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

wqsmodn.wk4 Date: 10/11 Appendix B-2 Page 1
Developer: Bruce Fielding Time: 12:18 PM
Software: Lotus 4.0 LA0007854, AI1556
Revision date: 09/07/06

Water Quality Screen for

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Ouachita River
Critical flow (Qr) cfs=	764
Harm. mean/avg tidal cfs=	3757
Drinking Water=1 HHNPCR=2	1
Marine, 1=y, 0=n	
Rec. Water Hardness=	38.5
Rec. Water TSS=	6
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	
Permit Number=	LA0007854, AI1556
Facility flow (Qef),MGD=	1.05
Outfall Number =	002 Phase 2
Eff. data, 2=lbs/day	2
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	1
Aquatic,acute only1=y,0=n	

Page Numbering/Labeling

Appendix	Appendix B-2
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.033333
MZ Fs =	0.333333
Critical Qr (MGD)=	493.7732
Harm. Mean (MGD)=	2428.149
ZID Dilution =	0.059969
MZ Dilution =	0.006339
HHnc Dilution=	0.002122
HHc Dilution=	0.000432
ZID Upstream =	15.67534
MZ Upstream =	156.7534
MZhhnc Upstream=	470.2602
MZhhc Upstream=	2312.523
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.008757
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	6.37176
lbs/day-->ug/L Qeo	114.1944
lbs/day-->ug/L Qef	114.1944
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.06339
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	8.452%
Dilution No. 2	6.3390%
Dilution No. 3	4.7543%
Dilution No. 4	3.5657%
Dilution No. 5	2.6743%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	1.77865
Total Cadmium	4.16884
Chromium III	4.80899
Chromium VI	1
Total Copper	2.657115
Total Lead	5.006713
Total Mercury	3.256612
Total Nickel	2.058769
Total Zinc	3.139712

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	11.29486	0.50869
Chromium III	251.1062	81.45626
Chromium VI	15.712	10.582
Copper	7.49644	5.433945
Lead	22.52913	0.877928
Mercury	1.734	0.012
Nickel	631.2203	70.10207
Zinc	50.97611	46.54892

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

LA0007854, AI1556

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHDW ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)		0.16		5	0	0.3408	700	350	5	
3-Chlorophenol				10					0.1	
4-Chlorophenol				10			383	192	0.1	
2,3-Dichlorophenol				10					0.04	
2,5-Dichlorophenol				10					0.5	
2,6-Dichlorophenol				10					0.2	
3,4-Dichlorophenol				10					0.3	
2,4-Dichlorophenocy-acetic acid (2,4-D)				---					100	
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---					10	
METALS AND CYANIDE										
Total Arsenic	0.12972			10	0	0.276304	604.3851	266.7974	88.93248	
Total Cadmium				1			47.08647	2.120646	41.6884	
Chromium III	8.738986	21.8081		10	1		1207.567	391.7224	240.4495	
Chromium VI	8.738986	21.8081		10	1		15.712	10.582	50	C
Total Copper	11.41579	26.6106		10	1		19.9189	14.43862	2657.115	
Total Lead	2.519347	5.432342		5	1		112.7969	4.395532	250.3357	
Total Mercury[*1]	0.04	0.09		0.2	1		5.646965	0.039079	6.513223	
Total Nickel	12.16	28.65		40	1		1299.537	144.324		
Total Zinc	8.266608	20.54843		20	1		160.0503	146.1502	15698.56	
Total Cyanide	3.02	8.64		20	1		45.9	5.4	663.8	
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						7.1E-007	C
VOLATILE COMPOUNDS										
Benzene	0.299137	1.099532		10	1		2249	1125	1.1	C
Bromoform				10			2930	1465	3.9	C
Bromodichloromethane				10					0.2	C
Carbon Tetrachloride	0.145526	0.307222		10	1		2730	1365	0.22	C
Chloroform	0.169781	0.371901		10	1		2890	1445	5.3	C
Dibromochloromethane				10					0.39	C
1,2-Dichloroethane	0.549766	1.705892		10	1		11800	5900	0.36	C
1,1-Dichloroethylene	0.129357	0.20212		10	1		1160	580	0.05	C
1,3-Dichloropropylene	0.234459	0.355731		10	1		606	303	9.86	
Ethylbenzene	0.258713	0.873158		10	1		3200	1600	2390	
Methyl Chloride	0.695292	1.536111		50	1		55000	27500		
Methylene Chloride	0.323392	0.719547		20	1		19300	9650	4.4	C
1,1,2,2-Tetrachloro-ethane				10			932	466	0.16	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 002	(*20) WQBL Max 002	(*21) WQBL Avg 002	(*22) (*23) WQBL Need MaxWQBL? 002 Phase
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day
NONCONVENTIONAL											
Total Phenols (4AAP)	11672.74	55213.69	2356.301	3735.276	29263.26	2356.301	2356.301	2356.301	5607.996	20.63413	49.10922 no
3-Chlorophenol	---	---	47.12602	---	---	47.12602	47.12602	47.12602	112.1599	0.412683	0.982184 no
4-Chlorophenol	6386.655	30288.65	47.12602	2043.73	16052.99	47.12602	47.12602	47.12602	112.1599	0.412683	0.982184 no
2,3-Dichlorophenol	---	---	18.85041	---	---	18.85041	18.85041	18.85041	44.86397	0.165073	0.392874 no
2,5-Dichlorophenol	---	---	235.6301	---	---	235.6301	235.6301	235.6301	560.7996	2.063413	4.910922 no
2,6-Dichlorophenol	---		94.25204	---	---	94.25204	94.25204	94.25204	224.3199	0.825365	1.964369 no
3,4-Dichlorophenol	---	---	141.3781	---	---	141.3781	141.3781	141.3781	336.4798	1.238048	2.946553 no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	47126.02	---	---	47126.02	47126.02	47126.02	112159.9	412.6825	982.1845 no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	4712.602	---	---	4712.602	4712.602	4712.602	11215.99	41.26825	98.21845 no
METALS AND CYANIDE											
Total Arsenic	10078.33	42088.2	41910.34	3225.065	22306.75	41910.34	3225.065	4224.835	10029.95	36.99688	87.83229 no
Total Cadmium	785.1829	334.539	19646.08	251.2585	177.3057	19646.08	177.3057	232.2704	551.4207	2.033992	4.828791 no
Chromium III	20136.6	61795.53	113314.3	6443.711	32751.63	113314.3	6443.711	8441.261	20039.94	73.92012	175.4898 no
Chromium VI	262.0029	1669.346	115676.1	83.84094	884.7536	115676.1	83.84094	109.8316	260.7453	0.961796	2.283347 yes
Total Copper	332.1545	2277.741	1252193	106.2894	1207.203	1252193	106.2894	139.2392	330.5601	1.219317	2.894715 yes
Total Lead	1880.926	693.4102	117973.2	601.8964	367.5074	117973.2	367.5074	481.4347	1142.948	4.215923	10.0088 no
Total Mercury[*1]	94.16505	6.164899	3069.423	30.13282	3.267396	3069.423	3.267396	4.280289	10.1616	0.037482	0.088985 yes
Total Nickel	21670.21	22767.59	---	6934.468	12066.83	---	6934.468	9084.153	21566.2	79.54993	188.8552 no
Total Zinc	2668.894	23055.69	7398107	854.0459	12219.52	7398107	854.0459	1118.8	2656.083	9.797333	23.25932 no
Total Cyanide	765.3981	851.8683	312822.5	244.9274	451.4902	312822.5	244.9274	320.8549	761.7242	2.809726	6.670419 yes
DIOXIN											
2,3,7,8 TCDD; dioxin	---	---	0.001643	---	---	0.001643	0.001643	0.001643	0.003909	0.000014	0.000034 no
VOLATILE COMPOUNDS											
Benzene	37502.84	177472.6	2544.875	12000.91	94060.46	2544.875	2544.875	2544.875	6056.803	22.28547	53.03942 no
Bromoform	48858.75	231108.7	9022.74	15634.8	122487.6	9022.74	9022.74	9022.74	21474.12	79.01213	188.0489 no
Bromodichloromethane	---	---	462.7046	---	---	462.7046	462.7046	462.7046	1101.237	4.051904	9.643532 no
Carbon Tetrachloride	45523.68	215333.4	508.975	14567.58	114126.7	508.975	508.975	508.975	1211.361	4.457095	10.60788 no
Chloroform	48191.73	227953.7	12261.67	15421.35	120815.4	12261.67	12261.67	12261.67	29182.78	107.3755	255.5536 no
Dibromochloromethane	---	---	902.274	---	---	902.274	902.274	902.274	2147.412	7.901213	18.80489 no
1,2-Dichloroethane	196769	930745	832.8683	62966.08	493294.9	832.8683	832.8683	832.8683	1982.226	7.293427	17.35836 no
1,1-Dichloroethylene	19343.39	91496.97	115.6761	6189.886	48493.39	115.6761	115.6761	115.6761	275.3092	1.012976	2.410883 no
1,3-Dichloropropylene	10105.26	47799.28	4646.625	3233.682	25333.62	4646.625	3233.682	4236.123	10056.75	37.09573	88.06697 no
Ethylbenzene	53361.09	252405.4	1126312	17075.55	133774.9	1126312	17075.55	22368.97	53104.95	195.885	465.0401 no
Methyl Chloride	917143.7	4338218	---	293486	2299256	---	293486	384466.6	912741.4	3366.774	7992.876 no
Methylene Chloride	321834.1	1522320	10179.5	102986.9	806829.7	10179.5	10179.5	10179.5	24227.21	89.14189	212.1577 no
1,1,2,2-Tetrachloro-ethane	15541.42	73513.08	370.1637	4973.253	38961.93	370.1637	370.1637	370.1637	880.9895	3.241523	7.714825 no

LA0007854, AI1556

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		0.177866	0.452749	10	1		1290	645	0.65	C
Toluene		0.210205	0.646784	10	1		1270	635	6100	
1,1,1-Trichloroethane		0.169781	0.436579	10	1		5280	2640	200	
1,1,2-Trichloroethane		0.169781	0.436579	10	1		1800	900	0.56	C
Trichloroethylene		0.169781	0.436579	10	1		3900	1950	2.8	C
Vinyl Chloride		0.840819	2.166725	10	1				1.9	C
ACID COMPOUNDS										
2-Chlorophenol		0.250629	0.79231	10	1		258	129	0.1	
2,4-Dichlorophenol		0.315307	0.905497	10	1		202	101	0.3	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250	125	0.00008	C
Hexachlorobenzene		0.121272	0.226374	10	1				0.00025	C
Hexachlorabutadiene		0.161696	0.396155	10	1		5.1	1.02	0.09	C
PESTICIDES										
Aldrin				0.05			3		0.00004	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.05			5.3	0.21	0.11	C
Chlordane				0.2			2.4	0.0043	0.00019	C
4,4'-DDT				0.1			1.1	0.001	0.00019	C
4,4'-DDE				0.1			52.5	10.5	0.00019	C
4,4'-DDD				0.1			0.03	0.006	0.00027	C
Dieldrin				0.1			0.2374	0.0557	0.00005	C
Endosulfan				0.1			0.22	0.056	0.47	
Endrin				0.1			0.0864	0.0375	0.26	
Heptachlor				0.05			0.52	0.0038	0.00007	C
Toxaphene				5			0.73	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19	11		
Ammonia								4000		
Chlorides										
Sulfates										
TDS										

(*1) Limitation retained from the previous permit based on the requirements of the June 13, 2002 Mercury in Fish Tissue TMDL.

LA0007854, AI1556

(*1) Toxic Parameters	(*12) WLAa Acute ug/L	(*13) WLAc Chronic ug/L	(*14) WLAh HHDW ug/L	(*15) LTAa Acute ug/L	(*16) LTAc Chronic ug/L	(*17) LTAh HHDW ug/L	(*18) Limiting A,C,HH ug/L	(*19) WQBL Avg 002 ug/L	(*20) WQBL Max 002 ug/L	(*21) WQBL Avg 002 lbs/day	(*22) WQBL Max 002 lbs/day	(*23) WQBL Need WQBL? Phase
Tetrachloroethylene	21511.19	101750.9	1503.79	6883.58	53928	1503.79	1503.79	1503.79	3579.02	13.16869	31.34148	no
Toluene	21177.68	100173.4	2874687	6776.858	53091.91	2874687	6776.858	8877.684	21076.03	77.74188	184.5628	no
1,1,1-Trichloroethane	88045.79	416469	94252.04	28174.65	220728.6	94252.04	28174.65	36908.8	87623.17	323.2103	767.3161	no
1,1,2-Trichloroethane	30015.61	141978.1	1295.573	9604.996	75248.37	1295.573	1295.573	1295.573	3083.463	11.34533	27.00189	no
Trichloroethylene	65033.82	307619.1	6477.864	20810.82	163038.1	6477.864	6477.864	6477.864	15417.32	56.72666	135.0094	no
Vinyl Chloride	---	---	4395.694	---	---	4395.694	4395.694	4395.694	10461.75	38.49309	91.61355	no
ACID COMPOUNDS												
2-Chlorophenol	4302.238	20350.19	47.12602	1376.716	10785.6	47.12602	47.12602	47.12602	112.1599	0.412683	0.982184	no
2,4-Dichlorophenol	3368.419	15933.09	141.3781	1077.894	8444.539	141.3781	141.3781	141.3781	336.4798	1.238048	2.946553	no
BASE NEUTRAL COMPOUNDS												
Benzidine	4168.835	19719.17	0.185082	1334.027	10451.16	0.185082	0.185082	0.185082	0.440495	0.001621	0.003857	no
Hexachlorobenzene	---	---	0.578381	---	---	0.578381	0.578381	0.578381	1.376546	0.005065	0.012054	yes
Hexachlorabutadiene	85.04423	160.9085	208.2171	27.21415	85.28149	208.2171	27.21415	35.65054	84.63602	0.312192	0.741158	no
PESTICIDES												
Aldrin	50.02602	---	0.092541	16.00833	---	0.092541	0.092541	0.092541	0.220247	0.00081	0.001929	no
Hexachlorocyclohexane (gamma BHC, Lindane)	88.3793	33.12821	254.4875	28.28138	17.55795	254.4875	17.55795	23.00092	54.60523	0.201419	0.478178	no
Chlordane	40.02082	0.67834	0.439569	12.80666	0.35952	0.439569	0.35952	0.470971	1.118107	0.004124	0.009791	no
4,4'-DDT	18.34287	0.157753	0.439569	5.86972	0.083609	0.439569	0.083609	0.109528	0.260025	0.000959	0.002277	no
4,4'-DDE	875.4553	1656.411	0.439569	280.1457	877.8977	0.439569	0.439569	0.439569	1.046175	0.003849	0.009161	no
4,4'-DDD	0.50026	0.94652	0.624651	0.160083	0.501656	0.624651	0.160083	0.209709	0.497859	0.001836	0.00436	no
Dieldrin	3.958726	8.786864	0.115676	1.266792	4.657038	0.115676	0.115676	0.115676	0.275309	0.001013	0.002411	no
Endosulfan	3.668575	8.83419	221.4923	1.173944	4.682121	221.4923	1.173944	1.537867	3.650966	0.013467	0.031972	no
Endrin	1.440749	5.915752	122.5276	0.46104	3.135349	122.5276	0.46104	0.603962	1.433834	0.005289	0.012556	no
Heptachlor	8.671177	0.599463	0.161947	2.774777	0.317715	0.161947	0.161947	0.161947	0.385433	0.001418	0.003375	no
Toxaphene	12.173	0.031551	0.555246	3.895359	0.016722	0.555246	0.016722	0.021906	0.052005	0.000192	0.000455	no
Other Parameters:												
Fecal Col (col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	316.8315	1735.287	---	101.3861	919.7023	---	101.3861	132.8157	315.3107	1.163067	2.761175	no
Ammonia	---	631013.6	---	---	334437.2	---	334437.2	438112.7	1040100	3836.553	9108.153	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

wqsmodn.wk4 Date: 10/11 Appendix B-3 Page 1
Developer: Bruce Fielding Time: 12:20 PM
Software: Lotus 4.0 LA0007854, AI1556
Revision date: 09/07/06

Water Quality Screen for

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Ouachita River
Critical flow (Qr) cfs=	764
Harm. mean/avg tidal cfs=	3757
Drinking Water=1 HHNPCR=2	1
Marine, 1=y, 0=n	
Rec. Water Hardness=	38.5
Rec. Water TSS=	6
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	
Permit Number=	LA0007854, AI1556
Facility flow (Qef),MGD=	1.073
Outfall Number =	002 Phase 3
Eff. data, 2=lbs/day	2
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	1
Aquatic,acute only1=y,0=n	

Page Numbering/Labeling

Appendix	Appendix B-3
Page Numbers 1-y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.033333
MZ Fs =	0.333333
Critical Qr (MGD)=	493.7732
Harm. Mean (MGD)=	2428.149
ZID Dilution =	0.061202
MZ Dilution =	0.006477
HHnc Dilution=	0.002168
HHc Dilution=	0.000442
ZID Upstream =	15.33934
MZ Upstream =	153.3934
MZhhnc Upstream=	460.1801
MZhhc Upstream=	2262.953
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.008949
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	6.37176
lbs/day-->ug/L Qeo	111.7466
lbs/day-->ug/L Qef	111.7466
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.06477
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	8.636%
Dilution No. 2	6.4770%
Dilution No. 3	4.8577%
Dilution No. 4	3.6433%
Dilution No. 5	2.7325%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	1.77865
Total Cadmium	4.16884
Chromium III	4.80899
Chromium VI	1
Total Copper	2.657115
Total Lead	5.006713
Total Mercury	3.256612
Total Nickel	2.058769
Total Zinc	3.139712

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	11.29486	0.50869
Chromium III	251.1062	81.45626
Chromium VI	15.712	10.582
Copper	7.49644	5.433945
Lead	22.52913	0.877928
Mercury	1.734	0.012
Nickel	631.2203	70.10207
Zinc	50.97611	46.54892

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

LA0007854, AI1556

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent		Effluent	MQLEffluent		95th %	Numerical Criteria			HH
Parameters	Instream	/Tech	/Tech	1=No 95%		estimate	Acute	Chronic	HHDW	Carcinogen
	Conc.	(Avg)	(Max)	0=95 %		Non-Tech	FW	FW		Indicator
	ug/L	lbs/day	lbs/day	ug/L		lbs/day	ug/L	ug/L	ug/L	"C"
NONCONVENTIONAL										
Total Phenols (4AAP)		0.16		5	0	0.3408	700	350	5	
3-Chlorophenol				10					0.1	
4-Chlorophenol				10			383	192	0.1	
2,3-Dichlorophenol				10					0.04	
2,5-Dichlorophenol				10					0.5	
2,6-Dichlorophenol				10					0.2	
3,4-Dichlorophenol				10					0.3	
2,4-Dichlorophenocy-acetic acid (2,4-D)				---					100	
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---					10	
METALS AND CYANIDE										
Total Arsenic	0.12972			10	0	0.276304	604.3851	266.7974	88.93248	
Total Cadmium				1			47.08647	2.120646	41.6884	
Chromium III	8.951906	22.33944		10	1		1207.567	391.7224	240.4495	
Chromium VI	8.951906	22.33944		10	1		15.712	10.582	50	C
Total Copper	11.69393	27.25896		10	1		19.9189	14.43862	2657.115	
Total Lead	2.58073	5.564698		5	1		112.7969	4.395532	250.3357	
Total Mercury[*1]	0.04	0.09		0.2	1		5.646965	0.039079	6.513223	
Total Nickel	12.49	29.41		40	1		1299.537	144.324		
Total Zinc	8.468019	21.04908		20	1		160.0503	146.1502	15698.56	
Total Cyanide	3.1	8.87		20	1		45.9	5.4	663.8	
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						7.1E-007	C
VOLATILE COMPOUNDS										
Benzene	0.306235	1.12562		10	1		2249	1125	1.1	C
Bromoform				10			2930	1465	3.9	C
Bromodichloromethane				10					0.2	C
Carbon Tetrachloride	0.148979	0.314511		10	1		2730	1365	0.22	C
Chloroform	0.173809	0.380724		10	1		2890	1445	5.3	C
Dibromochloromethane				10					0.39	C
1,2-Dichloroethane	0.56281	1.746366		10	1		11800	5900	0.36	C
1,1-Dichloroethylene	0.132426	0.206915		10	1		1160	580	0.05	C
1,3-Dichloropropylene	0.240022	0.364171		10	1		606	303	9.86	
Ethylbenzene	0.264852	0.893875		10	1		3200	1600	2390	
Methyl Chloride	0.711789	1.572557		50	1		55000	27500		
Methylene Chloride	0.331065	0.736619		20	1		19300	9650	4.4	C
1,1,2,2-Tetrachloro-ethane				10			932	466	0.16	C

LA0007854, AI1556

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 002	(*20) WQBL Max 002	(*21) WQBL Avg 002	(*22) WQBL Max 002	(*23) Need WQBL? Phase
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	11437.53	54037.67	2305.9	3660.011	28639.97	2305.9	2305.9	2305.9	5488.043	20.63509	49.11151	no
3-Chlorophenol	---	---	46.11801	---	---	46.11801	46.11801	46.11801	109.7609	0.412702	0.98223	no
4-Chlorophenol	6257.965	29643.52	46.11801	2002.549	15711.07	46.11801	46.11801	46.11801	109.7609	0.412702	0.98223	no
2,3-Dichlorophenol	---	---	18.4472	---	---	18.4472	18.4472	18.4472	43.90434	0.165081	0.392892	no
2,5-Dichlorophenol	---	---	230.59	---	---	230.59	230.59	230.59	548.8043	2.063509	4.911151	no
2,6-Dichlorophenol	---	---	92.23601	---	---	92.23601	92.23601	92.23601	219.5217	0.825403	1.96446	no
3,4-Dichlorophenol	---	---	138.354	---	---	138.354	138.354	138.354	329.2826	1.238105	2.94669	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---		46118.01	---	---	46118.01	46118.01	46118.01	109760.9	412.7017	982.2301	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	4611.801	---	---	4611.801	4611.801	4611.801	10976.09	41.27017	98.22301	no
METALS AND CYANIDE												
Total Arsenic	9875.251	41191.75	41013.89	3160.08	21831.63	41013.89	3160.08	4139.705	9827.85	37.04548	87.94766	no
Total Cadmium	769.3616	327.4136	19225.86	246.1957	173.5292	19225.86	173.5292	227.3232	539.6758	2.034275	4.829461	no
Chromium III	19730.85	60479.33	110890.5	6313.871	32054.04	110890.5	6313.871	8271.171	19636.14	74.01722	175.7203	no
Chromium VI	256.7236	1633.79	113197.7	82.15156	865.9089	113197.7	82.15156	107.6185	255.4914	0.963059	2.286346	yes
Total Copper	325.4616	2229.227	1225408	104.1477	1181.49	1225408	104.1477	136.4335	323.8994	1.220919	2.898518	yes
Total Lead	1843.026	678.641	115449.8	589.7683	359.6797	115449.8	359.6797	471.1804	1118.604	4.216509	10.01019	no
Total Mercury[*1]	92.26765	6.03359	3003.769	29.52565	3.197803	3003.769	3.197803	4.189122	9.945167	0.037488	0.088998	yes
Total Nickel	21233.56	22282.66	---	6794.74	11809.81	---	6794.74	8901.11	21131.64	79.65443	189.1033	no
Total Zinc	2615.116	22564.62	7239864	836.8371	11959.25	7239864	836.8371	1096.257	2602.563	9.810203	23.28987	no
Total Cyanide	749.9755	833.7241	306131.3	239.9922	441.8738	306131.3	239.9922	314.3897	746.3756	2.813417	6.679181	yes
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.001607	---	---	0.001607	0.001607	0.001607	0.003826	0.000014	0.000034	no
VOLATILE COMPOUNDS												
Benzene	36747.16	173692.5	2490.349	11759.09	92057.04	2490.349	2490.349	2490.349	5927.03	22.28568	53.03993	no
Bromoform	47874.25	226186.3	8829.419	15319.76	119878.7	8829.419	8829.419	8829.419	21014.02	79.01288	188.0506	no
Bromodichloromethane	---	---	452.7907	---	---	452.7907	452.7907	452.7907	1077.642	4.051942	9.643623	no
Carbon Tetrachloride	44606.39	210746.9	498.0698	14274.04	111695.9	498.0698	498.0698	498.0698	1185.406	4.457137	10.60799	no
Chloroform	47220.68	223098.4	11998.95	15110.62	118242.1	11998.95	11998.95	11998.95	28557.51	107.3765	255.556	no
Dibromochloromethane	---	---	882.9419	---	---	882.9419	882.9419	882.9419	2101.402	7.901288	18.80506	no
1,2-Dichloroethane	192804.2	910920.8	815.0233	61697.33	482788	815.0233	815.0233	815.0233	1939.755	7.293496	17.35852	no
1,1-Dichloroethylene	18953.63	89548.14	113.1977	6065.161	47460.52	113.1977	113.1977	113.1977	269.4105	1.012986	2.410906	no
1,3-Dichloropropylene	9901.637	46781.19	4547.235	3168.524	24794.03	4547.235	3168.524	4150.766	9854.109	37.14446	88.18265	no
Ethylbenzene	52285.87	247029.4	1102220	16731.48	130925.6	1102220	16731.48	21918.24	52034.9	196.1424	465.651	no
Methyl Chloride	898663.4	4245817	---	287572.3	2250283	---	287572.3	376719.7	894349.9	3371.197	8003.376	no
Methylene Chloride	315349.2	1489896	9961.395	100911.7	789644.8	9961.395	9961.395	9961.395	23708.12	89.14273	212.1597	no
1,1,2,2-Tetrachloro-ethane	15228.26	71947.3	362.2326	4873.043	38132.07	362.2326	362.2326	362.2326	862.1135	3.241554	7.714898	no

LA0007854, AI1556

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MOLEffluent 1=No 0=95 % ug/L	(*6) 95th % 95% estimate Non-Tech lbs/day	(*7)	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		0.182086	0.46349	10	1		1290	645	0.65	C
Toluene		0.215192	0.662129	10	1		1270	635	6100	
1,1,1-Trichloroethane		0.173809	0.446937	10	1		5280	2640	200	
1,1,2-Trichloroethane		0.173809	0.446937	10	1		1800	900	0.56	C
Trichloroethylene		0.173809	0.446937	10	1		3900	1950	2.8	C
Vinyl Chloride		0.860768	2.218133	10	1				1.9	C
ACID COMPOUNDS										
2-Chlorophenol		0.256575	0.811108	10	1		258	129	0.1	
2,4-Dichlorophenol		0.322788	0.926981	10	1		202	101	0.3	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250	125	0.00008	C
Hexachlorobenzene		0.124149	0.231745	10	1				0.00025	C
Hexachlorabutadiene		0.165532	0.405554	10	1		5.1	1.02	0.09	C
PESTICIDES										
Aldrin				0.05			3		0.00004	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.05			5.3	0.21	0.11	C
Chlordane				0.2			2.4	0.0043	0.00019	C
4,4'-DDT				0.1			1.1	0.001	0.00019	C
4,4'-DDE				0.1			52.5	10.5	0.00019	C
4,4' DDD				0.1			0.03	0.006	0.00027	C
Dieldrin				0.1			0.2374	0.0557	0.00005	C
Endosulfan				0.1			0.22	0.056	0.47	
Endrin				0.1			0.0864	0.0375	0.26	
Heptachlor				0.05			0.52	0.0038	0.00007	C
Toxaphene				5			0.73	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19	11		
Ammonia								4000		
Chlorides										
Sulfates										
TDS										

[*1] Limitation retained from the previous permit based on the requirements of the June 13, 2002 Mercury in Fish Tissue TMDL.

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 002	(*20) WQBL Max 002	(*21) WQBL Avg	(*22) WQBL Max 002	(*23) Need WQBL? Phase
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	21077.74	99583.71	1471.57	6744.878	52779.37	1471.57	1471.57	1471.57	3502.336	13.16881	31.34177	no
Toluene	20750.96	98039.78	2813198	6640.306	51961.08	2813198	6640.306	8698.801	20651.35	77.844	184.8052	no
1,1,1-Trichloroethane	86271.69	407598.4	92236.01	27606.94	216027.2	92236.01	27606.94	36165.09	85857.59	323.6349	768.3241	no
1,1,2-Trichloroethane	29410.8	138954	1267.814	9411.457	73645.63	1267.814	1267.814	1267.814	3017.397	11.34544	27.00214	no
Trichloroethylene	63723.41	301067	6339.07	20391.49	159565.5	6339.07	6339.07	6339.07	15086.99	56.72719	135.0107	no
Vinyl Chloride	---	---	4301.512	---	---	4301.512	4301.512	4301.512	10237.6	38.49345	91.61442	no
ACID COMPOUNDS												
2-Chlorophenol	4215.548	19916.74	46.11801	1348.976	10555.87	46.11801	46.11801	46.11801	109.7609	0.412702	0.98223	no
2,4-Dichlorophenol	3300.546	15593.73	138.354	1056.175	8264.676	138.354	138.354	138.354	329.2826	1.238105	2.94669	no
BASE NEUTRAL COMPOUNDS												
Benzidine	4084.834	19299.17	0.181116	1307.147	10228.56	0.181116	0.181116	0.181116	0.431057	0.001621	0.003857	no
Hexachlorobenzene	---	---	0.565988	---	---	0.565988	0.565988	0.565988	1.347052	0.005065	0.012055	yes
Hexachlorabutadiene	83.33061	157.4812	203.7558	26.6658	83.46505	203.7558	26.6658	34.93219	82.93062	0.312602	0.742131	no
PESTICIDES												
Aldrin	49.01801	---	0.090558	15.68576	---	0.090558	0.090558	0.090558	0.215528	0.00081	0.001929	no
Hexachlorocyclohexane (gamma BHC, Lindane)	86.59848	32.4226	249.0349	27.71151	17.18398	249.0349	17.18398	22.51101	53.44218	0.201447	0.478244	no
Chlordane	39.2144	0.663891	0.430151	12.54861	0.351862	0.430151	0.351862	0.46094	1.094292	0.004125	0.009793	no
4,4'-DDT	17.97327	0.154393	0.430151	5.751446	0.081828	0.430151	0.081828	0.107195	0.254487	0.000959	0.002277	no
4,4'-DDE	857.8151	1621.13	0.430151	274.5008	859.199	0.430151	0.430151	0.430151	1.02376	0.003849	0.009161	no
4,4'-DDD	0.49018	0.92636	0.611267	0.156858	0.490971	0.611267	0.156858	0.205483	0.487827	0.001839	0.004365	no
Dieldrin	3.878958	8.59971	0.113198	1.241267	4.557846	0.113198	0.113198	0.113198	0.26941	0.001013	0.002411	no
Endosulfan	3.594654	8.646028	216.7546	1.150289	4.582395	216.7546	1.150289	1.506879	3.577399	0.013485	0.032014	no
Endrin	1.411719	5.789751	119.9068	0.45175	3.068568	119.9068	0.45175	0.591792	1.404942	0.005296	0.012573	no
Heptachlor	8.496454	0.586695	0.158477	2.718865	0.310948	0.158477	0.158477	0.158477	0.377175	0.001418	0.003375	no
Toxaphene	11.92771	0.030879	0.543349	3.816869	0.016366	0.543349	0.016366	0.021439	0.050897	0.000192	0.000455	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	310.4474	1698.327	---	99.34316	900.1132	---	99.34316	130.1395	308.9572	1.164595	2.764803	no
Ammonia	---	617573.4	---	---	327313.9	---	327313.9	428781.2	1017946	3837.086	9109.418	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

APPENDIX B-4 LA0007854, AI No. 1556

Documentation and Explanation of Water Quality Screen
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

Receiving Water Characteristics:

Receiving Water: Ouachita River
Critical Flow, Qrc (cfs): 764
Harmonic Mean Flow, Qrh (cfs): 3757
Segment No.: 080101
Receiving Stream Hardness (mg/L): 38.5
Receiving Stream TSS (mg/L): 6
MZ Stream Factor, Fs: 0.333
Plume distance, Pf: N/A

Effluent Characteristics:

Company: ANGUS Chemical Company
Facility flow, Qe (MGD): 0.91 Phase 1
1.05 Phase 2
1.073 Phase 3

Effluent Hardness: N/A
Effluent TSS: N/A
Pipe/canal width, Pw: N/A
Permit Number: LA0007854

Variable Definition:
Qrc, critical flow of receiving stream, cfs
Qrh, harmonic mean flow of the receiving stream, cfs
Pf = Allowable plume distance in feet, specified in LAC 33.IX.1115.D
Pw = Pipe width or canal width in feet
Qe, total facility flow , MGD
Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)
Cu, ambient concentration, ug/L
Cr, numerical criteria from LAC.IX.1113, Table 1
WLA, wasteload allocation
LTA, long term average calculations
WQBL, effluent water quality based limit
ZID, Zone of Initial Dilution in % effluent
MZ, Mixing Zone in % effluent

Formulas used in aquatic life water quality screen (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 \times Fs + Qe)}$$

$$WLA\ a,c,h = \frac{Cr}{\text{Dilution Factor}} - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8)\ Pw\ \pi^{1/2}}{Pf}$$

$$WLA = \frac{(Cr-Cu)\ Pf}{(2.8)\ Pw\ \pi^{1/2}}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{1/2}}{2.38\ Pw^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 + Qe)}$$

$$WLA\ a,c,h = \frac{Cr}{\text{Dilution Factor}} - \frac{(Qrc \times 0.6463 \times Cu)}{Qe}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

$$\text{Dilution Factor} = \frac{Qe}{(Qrh \times 0.6463 + Qe)}$$

$$WLA\ a,c,h = \frac{Cr}{\text{Dilution Factor}} - \frac{(Qrh \times 0.6463 \times Cu)}{Qe}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8)\ Pw\ \pi^{1/2}}{Pf}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{*}}{(2.8)\ Pw\ \pi^{1/2}}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{1/2*}}{2.38\ Pw^{1/2}}$$

* Pf is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{(Cr-Cu)}{\text{site specific dilution}}$$

Longterm Average Calculations:
LTAa = WLAa X 0.32
LTAc = WLAc X 0.53
LTAh = WLAh

WQBL Calculations:
Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:
Daily Maximum = Min(LTAa, LTAc) X 3.11
Monthly Average = Min(LTAc, LTAc) X 1.31

If human health LTA is more limiting:
Daily Maximum = LTAh X 2.38
Monthly Average = LTAh

Mass Balance Formulas:

mass (lbs/day): (ug/L) X 1/1000 X (flow, MGD) X 8.34 = lbs/day

$$\text{concentration(ug/L)}: \frac{\text{lbs/day}}{\text{(flow, MGD) X 8.34 X 1/1000}} = \text{ug/L}$$

The following is an explanation of the references in the spreadsheet.

(*1) Parameter being screened.
(*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
(*3) Monthly average effluent or technolgy value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
(*4) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
(*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present on-site and/or in the

waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.

(*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.

(*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (*18) - (*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.

(*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness Dependent Criteria:

Metal	Formula
Cadmium	$e^{(1.1280[\ln(\text{hardness})] - 1.6774)}$
Chromium III	$e^{(0.8190[\ln(\text{hardness})] + 3.6880)}$
Copper	$e^{(0.9422[\ln(\text{hardness})] - 1.3884)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 1.4600)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 3.3612)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.8604)}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

Metal	Multiplier
Arsenic	$1 + 0.48 \times TSS^{-0.73} \times TSS$
Cadmium	$1 + 4.00 \times TSS^{-1.13} \times TSS$
Chromium III	$1 + 3.36 \times TSS^{-0.93} \times TSS$
Copper	$1 + 1.04 \times TSS^{-0.74} \times TSS$
Lead	$1 + 2.80 \times TSS^{-0.80} \times TSS$
Mercury	$1 + 2.90 \times TSS^{-1.14} \times TSS$
Nickel	$1 + 0.49 \times TSS^{-0.57} \times TSS$
Zinc	$1 + 1.25 \times TSS^{-0.70} \times TSS$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

Metal	Multiplier

Copper	$1 + (10^{4.86} \times TSS^{-0.72} \times TSS) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times TSS^{-0.85} \times TSS) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times TSS^{-0.52} \times TSS) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

(*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness dependent criteria:

Metal	Formula
Cadmium	$e^{(0.7852[\ln(\text{hardness})] - 3.4900)}$
Chromium III	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$
Copper	$e^{(0.8545[\ln(\text{hardness})] - 1.3860)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 4.7050)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 1.1645)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (*8), acute numerical criteria for aquatic life protection.

(*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primary contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.

(*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.

(*12) Wasteload Allocation for acute aquatic criteria (WLAa). Dilution type WLAa is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAa formulas for streams:

$$WLAa = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAa formulas for static water bodies:

WLAa = (Cr-Cu)/Dilution Factor)

Cr represents aquatic acute numerical criteria from column (*8).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*13) Wasteload Allocation for chronic aquatic criteria (WLAc). Dilution type WLAc is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L.
Dilution WLAc formula:

$$WLAc = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAc formulas for static water bodies:
WLAc = (Cr-Cu)/Dilution Factor)
Cr represents aquatic chronic numerical criteria from column (*9).
If Cu data is unavailable or inadequate, assume Cu=0.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution WLAh formula:

$$WLAh = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc,Qrh \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAh formulas for static water bodies:
WLAh = (Cr-Cu)/Dilution Factor)
Cr represents human health numerical criteria from column (*10).
If Cu data is unavailable or inadequate, assume Cu=0.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*15) Long Term Average for aquatic numerical criteria (LTAa). WLAa numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. WLAa X 0.32 = LTAa.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*16) Long Term Average for chronic numerical criteria (LTAc). WLAc numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. WLAc X 0.53 = LTAc.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. WLAc X 1 = LTAh.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.

(*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ($LTA_{limiting\ aquatic}$ X 1.31 = $WQBL_{monthly\ average}$). If human health criteria was the most limiting criteria then LTAh = $WQBL_{monthly\ average}$. If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.

(*20) End of pipe Water Quality Based Limit (WQBL) daily maxium in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ($LTA_{limiting\ aquatic}$ X 3.11 = $WQBL_{daily\ max}$). If human health criteria was the most limiting criteria then LTAh is multiplied by 2.38 to determine the daily maximum WQBL ($LTA_{limiting\ aquatic}$ X 2.38 = $WQBL_{daily\ max}$). If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.

(*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Monthly average WQBL, ug/l/1000 X facility flow, MGD X 8.34 = monthly average WQBL, lbs/day.

(*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL, ug/l/1000 X facility flow, MGD X 8.34 = daily maximum WQBL, lbs/day.

(*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.

Appendix C

MEMORANDUM

TO: Jennifer L. Sheppard

FROM: Will Barlett

DATE: May 9, 2007

RE: Stream Flow and Water Quality Characteristics for the Ouachita River, receiving water for ANGUS Chemical Company (Permit No. LA0007854, AI: 1556)

Determinations of water quality characteristics for Outfalls 002 and 005 were taken from ambient monitoring station #13 on the Ouachita River at the bridge on State Highway 2 in Sterlington, Louisiana.

The following results were obtained:

Average hardness = 38.5 mg/l
15th percentile TSS = 6.0 mg/l

The 7Q10 at this location has been determined to be 764 cfs and the harmonic mean has been determined to be 3757 cfs.

If you have additional questions or comments, please contact me at 2-3468.

WGB: wb

Appendix D

FRESHWATER ACUTE

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0007854**
Facility Name: **ANGUS Chemical Company**
Previous Critical Biomonitoring Dilution: **Outfall 002: 5% (10:1 ACR)**
Outfall 005: 6% (10:1 ACR)

Proposed Critical Biomonitoring Dilution: **Outfall 002: 6% (10:1 ACR)**
Outfall 005: 1% (10:1 ACR)

Date of Review: **08/28/07** Name of Reviewer: **Laura Keen**

Recommended Frequency by Species:

***Pimephales promelas* (Fathead minnow): Once / Quarter[1]**
***Daphnia pulex* (water flea): Once / Quarter[1]**

Recommended Dilution Series:

Outfall 002: (Phases 1, 2, and 3): 3%, 4%, 5%, 6%, and 9%

Outfall 005: 0.5%, 0.7%, 0.9%, 1%, and 2%

Number of Tests Performed during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): 22**
***Daphnia pulex* (water flea): 6**
***Daphnia magna* (water flea): N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea): 16**

Number of Failed Tests during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): 1 (sub-lethal)**
***Daphnia pulex* (water flea): No failures on file during the past 5 years**
***Daphnia magna* (water flea): N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea): No failures on file during the past 5 years**

[1] If there are no lethal effects demonstrated after the first year of quarterly testing, the permittee may certify fulfillment of the WET testing requirements in writing to the permitting authority. If granted, the biomonitoring frequency for the test species may be reduced to not less than once per year for the less sensitive species (usually *Pimephales promelas*) and not less than twice per year for the more sensitive species (usually *Daphnia pulex*). Upon expiration of the permit, the biomonitoring frequency for both species shall revert to once per quarter until the permit is re-issued.

Failed Test Dates during previous 5 years by Species:

Pimephales promelas (Fathead minnow):	**Test Period: 10/01/02 – 12/31/02 (sub-lethal)**
Daphnia pulex (water flea):	**No failures on file during the past 5 years**
Daphnia magna (water flea):	**N/A – Testing of species was not required**
Ceriodaphnia dubia (water flea):	**No failures on file during the past 5 years**

Previous TRE Activities: **N/A – No previous TRE Activities**

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

ANGUS Chemical Company owns and operates a specialty synthetic organic chemical plant manufacturing nitroparaffins in Sterlington, Ouachita Parish, Louisiana. LPDES Permit LA0007854, effective April 1, 2002, contained freshwater chronic biomonitoring as an effluent characteristic of Outfall 002 for *Ceriodaphnia dubia* and *Pimephales promelas*. The effluent series consisted of 0.219%, 0.292%, 0.390%, 0.520%, and 0.693% concentrations, with the critical biomonitoring dilution being defined as the 0.520% effluent concentration. The testing was to be performed once per quarter for the *Ceriodaphnia dubia* and the *Pimephales promelas*. Data on file indicate that the permittee has complied with the biomonitoring requirements contained in LA0007854 with one sub-lethal failure to the *Pimephales promelas* (testing period of 10/01/02 – 12/31/02) during the last five years.

LPDES Permit LA0007854 was modified on 12/1/05 to include an additional Outfall 005, which [due to the additives of: sodium hypochlorite, AMERFLOC 482 (polymer), citric acid, sodium meta-bisulfite, hypersperse (antiscalant), membrane cleaner, and caustic soda] included freshwater acute biomonitoring with an effluent series consisting of 2%, 3%, 4%, 6%, and 8% concentrations, with the critical biomonitoring dilution being defined as the 6% concentration. The testing was to be performed once per quarter for the *Daphnia pulex* and *Pimephales promelas*. The permittee has complied with these biomonitoring requirements by reporting quarterly DMRs showing no discharge from Outfall 005 since the 12/1/05 permit modification to LA0007854. The modification of LA0007854 also adjusted the biomonitoring requirements for Outfall 002, changing freshwater chronic biomonitoring to freshwater acute biomonitoring. The effluent series for Outfall 002 became 2%, 3%, 4%, 5%, and 7% concentrations, with the critical biomonitoring dilution being defined as the 5% effluent concentration. Testing was to be performed once per quarter for the *Daphnia pulex* and *Pimephales promelas*. Data on file indicate that the permittee has complied with these biomonitoring requirements.

The permittee has a planned expansion of Outfall 002 (the continuous discharge of process wastewater, cooling tower blowdown, Hydrogen Plant blowdown, sanitary, laboratory, and dry weather ditch wastewater from the Sterlington Plant) that will occur in three phases. Therefore, to adequately assess the facility's effluent potential for receiving stream and/or aquatic species toxicity, it is recommended that freshwater acute biomonitoring be an effluent characteristic of Outfall 002 in LA0007854 for Phase 1 (estimated flow of 0.92 mgd), Phase 2 (estimated flow of 1.050 mgd), and Phase 3 (estimated

flow of 1.073 mgd). The effluent dilution series shall be 3%, 4%, 5%, 6%, and 9%, with the 6% concentration being defined as the critical biomonitoring dilution (the 10:1 Acute-to-Chronic ratio has been implemented).

According to the permit application, a sodium chloride solution (~10%) will be utilized for the regeneration of the ion exchanger. This ion exchanger regeneration wastewater will be discharged through the Outfall 005. Then sodium bisulfite will be added to remove excess chlorine from the clarified water makeup. Therefore, it is recommended that freshwater acute biomonitoring be an effluent characteristic of Outfall 005 (discharge of 0.2016 mgd of ion exchanger regeneration wastewater, clarifier underflow, and previously sampled utility wastewaters from Internal Outfall 105) in LA0007854. The effluent dilution series shall be 0.5%, 0.7%, 0.9%, 1%, and 2% concentrations, with the 1% concentration being defined as the critical dilution (the 10:1 Acute-to-Chronic ratio has been implemented).

In accordance with the Environmental Protection Agency (Region 6) WET testing frequency acceleration(s), the biomonitoring frequency for Outfall 002 (during all phases of expansion) and Outfall 005 shall be once per quarter for *Daphnia pulex* and *Pimephales promelas*. If there are no significant lethal effects demonstrated at or below the critical dilution during the first four quarters of testing, the permittee may certify fulfillment of the WET testing requirements to the permitting authority and WET testing may be reduced to not less than once per six months for the more sensitive species (usually *Daphnia pulex*) and not less than once per year for the less sensitive species (usually *Pimephales promelas*) for the remainder of the term of the permit. Upon expiration of the permit, the monitoring frequency for both test species shall revert to once per quarter until the permit is re-issued.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies (Revised June 30, 2000), and the Best Professional Judgement (BPJ) of the reviewer.

Appendix E

APPENDIX E

OUTFALL 002 PHASE 1- the discharge of Sterlington Plant and Nitration Pilot Plant process wastewater, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

Outfall description was taken from a combination of the Section 2, Table 2-1 Outfall Summary in the May 2006 application submittal, the Form 2-C pages in the May 2007 Addendum, and the narrative from Section 2 of the May 2007 Addendum.

WASTE STREAMS	FLOW (MGD)	DOCUMENT LOCATION
PROCESS		
Nitroparaffin Basics Production	0.401	May 2007 Addendum, Appendix A, Page 1A of 4
Nitroparaffin Derivatives and Crystal Production	0.332	May 2007 Addendum, Appendix A, Page 1A of 4
Lab Wastewater	0.029	May 2007 Addendum, Appendix A, Page 1A of 4
Dry Weather Ditch Flow	0.0774	May 2007 Addendum, Appendix A, Page 1A of 4
Total Process Flow	**0.8394**	
SANITARY WASTEWATER	0.0286	May 2007 Addendum, Appendix A, Page 1A of 4
UTILITY WASTEWATER		
No. 3, 6, and Pilot Plant CTBD	0.05	May 2007 Addendum, Appendix A, Page 1A of 4
Hydrogen Plant Blwdwn	0.002	May 2007 Addendum, Appendix A, Page 1A of 4
Total Utility Flow	**0.052**	
Total OCPSF + BPJ Flow	**0.92(*)**	

(*) The Max 30 Day Flow for Phase 1, as reported in the September 2006 application submittal, is 0.910 MGD. However, an estimated flow of 0.92 MGD has been used for technology and water quality screening purposes due to the incorporation of the additional 10,000 GPD discharge expected by the end of 2007. This flow comes from Appendix A, Page 1A of 4, of the May 2007 Addendum.

Applicable Guidelines

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414 (Subparts H and I)

Outfall 002 Phase 1 Continued:

Metal Bearing Flow - BPJ and Guidelines

Total Chromium, Total Copper, Total Lead, and Total Zinc - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.401 MGD for Nitroparaffin basics production, 0.332 MGD for Nitroparaffin derivatives and crystal production, 0.029 MGD for the laboratory wastewater, 0.05 MGD for the No. 3, 6, and Pilot Plant cooling tower blowdown, and 0.002 MGD for the Hydrogen Plant blowdown, for a total of 0.814 MGD of metal bearing flow.

Total Nickel and Total Cyanide - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.401 MGD for Nitroparaffin basics production and 0.332 MGD for Nitroparaffin derivatives and crystal production, for a total of 0.733 MGD of metal bearing flow.

OUTFALL 002 PHASE 2 - the discharge of Sterlington Plant, Nitration Pilot Plant, and Wet Air Oxidation process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

Outfall description was taken from a combination of the Section 2, Table 2-1 Outfall Summary in the May 2006 application submittal, the Form 2-C pages in the May 2007 Addendum, and the narrative from Sections 2 and 3 of the May 2007 Addendum.

WASTE STREAMS	**FLOW (MGD)**	**DOCUMENT LOCATION**
PROCESS		
Nitroparaffin Basics Production	0.531	May 2007 Addendum, Appendix A, Page 1B of 4
Nitroparaffin Derivatives and Crystal Production	0.332	May 2007 Addendum, Appendix A, Page 1B of 4
Lab Wastewater	0.029	May 2007 Addendum, Appendix A, Page 1B of 4
Dry Weather Ditch Flow	0.0774	May 2007 Addendum, Appendix A, Page 1B of 4
Total Process Flow	**0.9694**	
SANITARY WASTEWATER	0.0286	May 2007 Addendum, Appendix A, Page 1B of 4
UTILITY WASTEWATER		
No. 3, 6, and Pilot Plant CTBD	0.05	May 2007 Addendum, Appendix A, Page 1B of 4
Hydrogen Plant Blwdwn	0.002	May 2007 Addendum, Appendix A, Page 1B of 4
Total Utility Flow	**0.052**	
Total OCPSF + BPJ Flow	**1.05 (*)**	

(*) An estimated flow of 1.05 MGD has been used for technology and water quality screening purposes due to the incorporation of the additional 130,000 GPD discharge expected by the end of 2008. This flow comes from Appendix A, Page 1B of 4, of the May 2007 Addendum.

Applicable Guidelines

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414 (Subparts H and I)

Outfall 002 Phase 2 Continued:

Metal Bearing Flow - BPJ and Guidelines

Total Chromium, Total Copper, Total Lead, and Total Zinc - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.531 MGD for Nitroparaffin basics production, 0.332 MGD for Nitroparaffin derivatives and crystal production, 0.029 MGD for the laboratory wastewater, 0.05 MGD for the No. 3, 6, and Pilot Plant cooling tower blowdown, and 0.002 MGD for the Hydrogen Plant blowdown, for a total of 0.944 MGD of metal bearing flow.

Total Nickel and Total Cyanide - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.531 MGD for Nitroparaffin basics production and 0.332 MGD for Nitroparaffin derivatives and crystal production, for a total of 0.863 MGD of metal bearing flow.

OUTFALL 002 PHASE 3 - the discharge of Sterlington Plant, Nitration Pilot Plant, Wet Air Oxidation, and Bicarbonate Wash Water process wastewaters, Hydrogen Plant blowdown, cooling tower blowdown, air pollution control scrubber water, sanitary wastewater from ANGUS Chemical Company and Koch Nitrogen, laboratory wastewater, dry weather ditch wastewater, miscellaneous washdown water, rinse water, and miscellaneous deminimus discharges associated with the Sterlington Plant and Nitration Pilot Plant processes.

Outfall description was taken from a combination of the Section 2, Table 2-1 Outfall Summary in the May 2006 application submittal, the Form 2-C pages in the May 2007 Addendum, and the narrative from Sections 2, 3, and 4 of the May 2007 Addendum.

WASTE STREAMS	**FLOW (MGD)**	**DOCUMENT LOCATION**
PROCESS		
Nitroparaffin Basics Production	0.554	May 2007 Addendum, Appendix A, Page 1C of 4
Nitroparaffin Derivatives and Crystal Production	0.332	May 2007 Addendum, Appendix A, Page 1C of 4
Lab Wastewater	0.029	May 2007 Addendum, Appendix A, Page 1C of 4
Dry Weather Ditch Flow	0.0774	May 2007 Addendum, Appendix A, Page 1C of 4
Total Process Flow	**0.9924**	
SANITARY WASTEWATER	0.0286	May 2007 Addendum, Appendix A, Page 1C of 4
UTILITY WASTEWATER		
No. 3, 6, and Pilot Plant CTBD	0.05	May 2007 Addendum, Appendix A, Page 1C of 4
Hydrogen Plant Blwdwn	0.002	May 2007 Addendum, Appendix A, Page 1C of 4
Total Utility Flow	**0.052**	
Total OCPSF + BPJ Flow	**1.073(*)**	

(*) An estimated flow of 1.05 MGD has been used for technology and water quality screening purposes due to the incorporation of the additional 130,000 GPD discharge expected by the end of 2008. This flow comes from Appendix A, Page 1B of 4, of the May 2007 Addendum.

Applicable Guidelines

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414 (Subparts H and I)

Outfall 002 Phase 3 Continued:

Metal Bearing Flow - BPJ and Guidelines

Total Chromium, Total Copper, Total Lead, and Total Zinc - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subpart H for metal bearing wastestreams. The flows used for this calculation are 0.554 MGD for Nitroparaffin basics production, 0.332 MGD for Nitroparaffin derivatives and crystal production, 0.029 MGD for the laboratory wastewater, 0.05 MGD for the No. 3, 6, and Pilot Plant cooling tower blowdown, and 0.002 MGD for the Hydrogen Plant blowdown, for a total of 0.967 MGD of metal bearing flow.

Total Nickel and Total Cyanide - Limitations were established in accordance with the OCPSF Guidelines under 40 CFR Part 414, Subparts H and I for metal bearing wastestreams. The flows used for this calculation are 0.554 MGD for Nitroparaffin basics production and 0.332 MGD for Nitroparaffin derivatives and crystal production, for a total of 0.886 MGD of metal bearing flow.

INTERNAL OUTFALL 102 (ALL OUTFALL 002 PHASES) - the discharge of sanitary wastewater.

Outfall description was taken from a combination of the Section 2, Table 2-1 Outfall Summary in the May 2006 application submittal, and the Form 2-C pages in the May 2007 Addendum.

WASTE STREAMS	FLOW (MGD)	DOCUMENT LOCATION
Sanitary	0.0286	May 2007 Addendum, Appendix A, Pages 1A, 1B, and 1C of 4

OUTFALL 004 - the discharge of non-process stormwater; utility wastewaters including clean water from hydrotesting, steam condensate, safety shower water, eye bath water, and miscellaneous washdown waters; and uncontaminated deionized water, potable water, river water used as firewater, and clarified water.

Outfall description was taken from a combination of the Section 2, Table 2-1 Outfall Summary in the May 2006 application submittal and the June 21, 2007 e-mail correspondence from Jeff Ratcliff (URS Consultant representing ANGUS) to Jenniffer Sheppard (LDEQ).

WASTE STREAMS	FLOW (MGD)	DOCUMENT LOCATION
Utility & Stormwater	Intermittent	Section 2, Table 2-1 Outfall Summary in the May 2006 application submittal

OUTFALL 005 - the discharge of clarifier underflow (ultra filtration reject water) and previously sampled utility wastewaters from Internal Outfall 105.

Outfall description was taken from a combination of the Section 2, Table 2-1 Outfall Summary in the May 2006 application submittal and the Form 2-C pages in the May 2007 Addendum.

WASTE STREAMS	FLOW (MGD)	DOCUMENT LOCATION
Utility	0.94464 (*)	May 2007 Addendum, Appendix A, Pages 1A, 1B, and 1C of 4

(*) This is an estimated value. This outfall is not currently discharging.

INTERNAL OUTFALL 105 - utility wastewaters including boiler blowdown and boiler samples; BJ-29 Sump wastewater (wastewater from oil storage, centax area, and water treatment areas); reverse osmosis reject/cleaning and/or demineralizer backwash/regeneration; and once through cooling water, including from the electric and diesel air compressors, boiler feedwater pumps, the Bingham BFW pump, and boiler ID/OD fans with final discharge through Outfall 005.

Outfall description was taken from a combination of the Section 2, Table 2-1 Outfall Summary in the May 2006 application submittal and the Form 2-C pages in the May 2007 Addendum.

WASTE STREAMS	FLOW (MGD)	DOCUMENT LOCATION
Utility	0.74304 (*)	May 2007 Addendum, Appendix A, Pages 1A, 1B, and 1C of 4

(*) This is an estimated value. This outfall is not currently discharging.